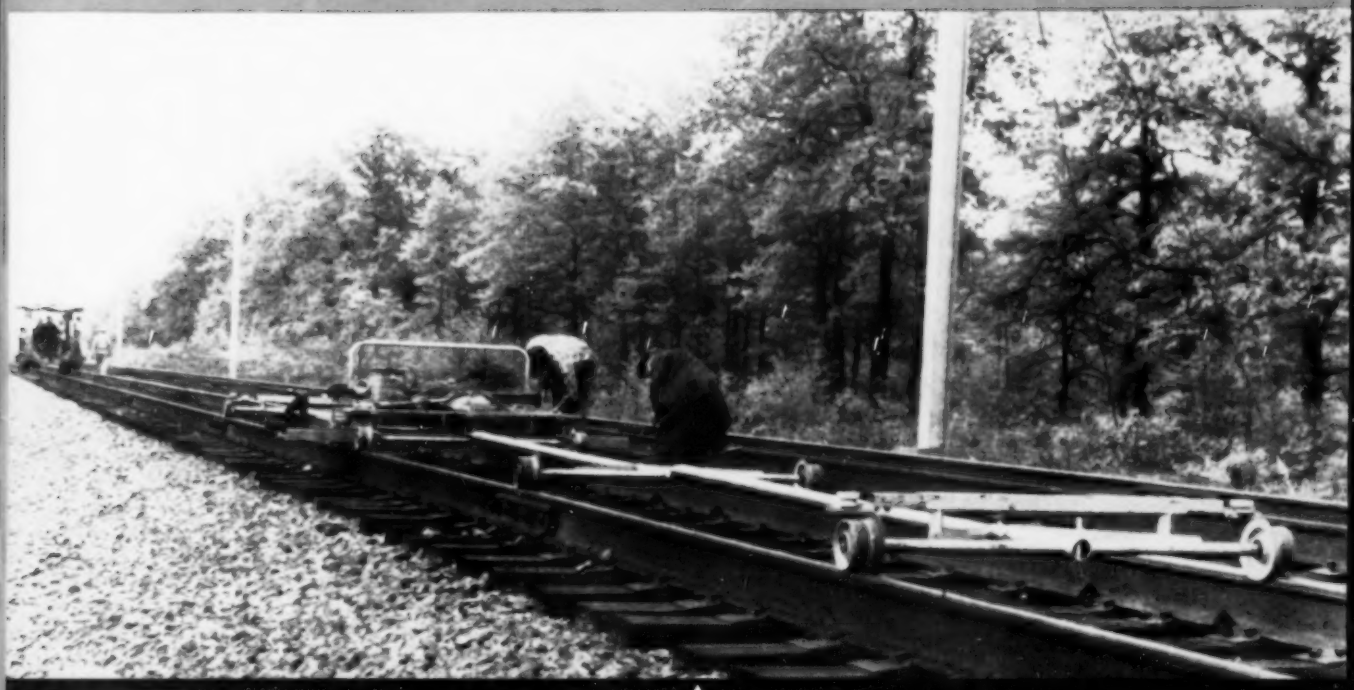
How the B&O Protects Coil Steel Shipments

August 3, 1959

RAILWAY AGE *weekly*



New Midget Surfacer ↑ speeds track work

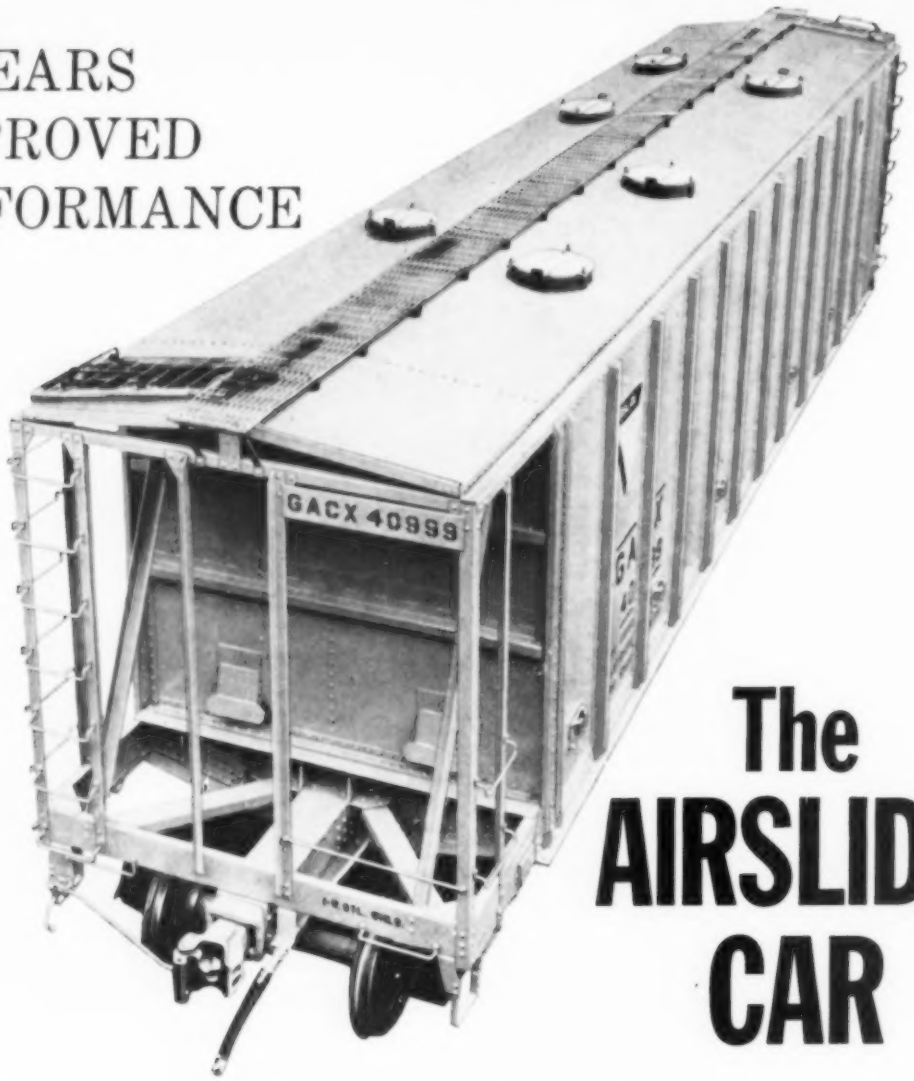
Job Standards

...can tell how well each train crew does its work

COMP
R STEVEN RICE
UNIVERSITY MICROFILMS
313 NO FIRST ST
ANN ARBOR MICH

60 cents A Simmons-Boardman TIME-SAVER Publication

6 YEARS OF PROVED PERFORMANCE



The AIRSLIDE® CAR

Every year, more and more shippers are going to Airslide Cars for economical bulk shipment. Here's why:

1. No bills for bags, drums or containers
2. Easier, safer loading and unloading
3. No packing, racking or stacking
4. Far more clearance for unloading

For further information on bulk shipping in Airslide Cars, call or write. You'll find, *it pays to plan with General American*

Airslide Car Department
GENERAL AMERICAN TRANSPORTATION CORPORATION
135 South LaSalle Street • Chicago 90, Illinois
In Canada: Canadian General Transit Co., Ltd., Montreal

AIRSLIDE GENERAL AMERICAN TRADE MARK

He's ready to help you install and test these bolts

Experienced Bethlehem contact men are ready—anytime—
to help you with the original installation and testing of
mine roof bolts and accessories. Just call or
write our nearest sales office. We'll do the rest.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA. *Export Distributor: Bethlehem Steel Export Corporation*

BETHLEHEM STEEL

BETHLEHEM STEEL

Highway Crossing Signal Control

with no insulated rail joints

now possible with new UNION AFO circuit

NOW YOU CAN INSTALL highway crossing signals without insulated rail joints and without disturbing your present signaling system.

This new UNION Audio Frequency Overlay circuit (AFO) can be superimposed on any existing track circuit —AC, DC or coded—without mutual interference. It is especially desirable for use with welded rail because it eliminates the need for cutting the rail. It can also be arranged to bridge insulated rail joints already in the track circuit.

The UNION AFO electronic equipment features the use of hermetically sealed junction transistors throughout, eliminating all vacuum tubes, and is designed to operate from the standard 10 or 12-volt battery supply. Ask our district sales representatives, in any of the offices listed below, for detailed information.

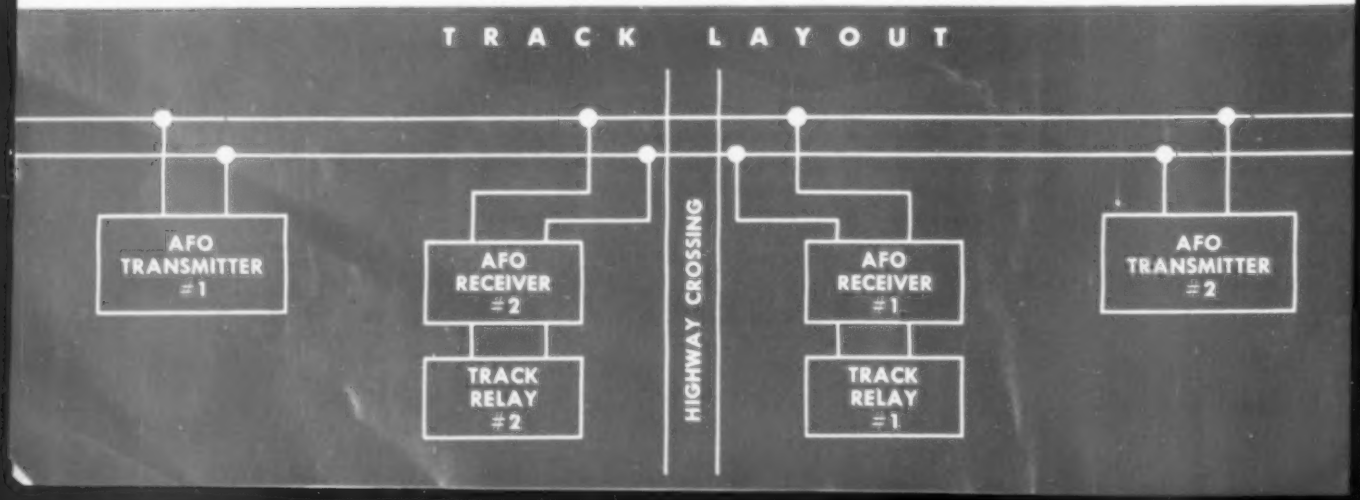
"Pioneers in Push-Button Science"

UNION SWITCH & SIGNAL

DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY

SWISSVALE, PENNSYLVANIA

NEW YORK • PITTSBURGH • CHICAGO • SAN FRANCISCO



RAILWAY AGE *weekly* August 3, 1959 • Vol. 147, No. 5

Week at a Glance

Departments

Current Publications 32
Freight Car Loadings 31
New Equipment 31
New Products Report 33
People in the News 35
Railroading After Hours 26
Railway Market 31
Revenues and Expenses 27
Supply Trade 35
The Action Page 38
Watching Washington 10
You Ought to Know 36

• Editorial and Executive Offices New York 7, 30 Church St.

JAMES G. LYNE, Editor
ROBERT G. LEWIS, Publisher
Executive Editor ..... Joe W. Kizzia
Managing Editor ..... Fred C. Miles
News Editor ..... Luther S. Miller
Traffic-Transportation .. G. C. Hudson
Mechanical
C. L. Combes F. N. Houser, Jr.
Signaling & Communications
Robert W. McKnight Robert J. Barber
Associate Editors
R. H. Craib Harry M. Grayson, Jr.
Librarian ..... Edith C. Stone
Editorial Assistant ..... June Meyer
Art Director ..... Russell F. Rypsam
Design and Layout .. Joel Petrower

• Chicago 3, 79 West Monroe St.
Western Editor .. Wallace W. Abbey
Regional News ..... Gus Welty
Mechanical ..... Norman E. Gillespie
Engineering ..... M. H. Dick
R. E. Dove E. W. Hodgkins, Jr.
Purchases & Stores ..... R. M. Schmidl
Editorial Assistant .. Wanda Brown

• Washington 4, National Press Bldg.
Washington Editor . Walter J. Taft

Railway Age, established in 1856, is indexed by the Industrial Arts Index, the Engineering Index Service and the Public Affairs Information Service. Name registered in U.S. Patent Office and Trade Mark Office in Canada.

Published weekly by the Simmons-Boardman Publishing Corporation at 440 Boston Post Road, Orange, Conn. Second-class postage paid at the Post Office at Orange, Conn. James G. Lyne, chairman of the board; Arthur J. McGinnis, president and treasurer; Duane C. Salisbury, executive vice president; George Dusenbury, vice president and editorial and promotion director; Robert G. Lewis, Joe W. Kizzia, M. H. Dick, M. J. Figa, R. C. Van Ness, vice presidents.

'Full-crew' laws gain ground ..... p. 9

In Wisconsin and California, the railroads have lost their fights against what some call "featherbedding by legislation." In both cases, old "full-crew" laws were tightened.

Cover Story—How the B&O protects coil steel shipments p.11

The road's mechanical department has developed an improved cushioning arrangement which gives better protection to coil steel. It's been applied to 100 gondola cars turned out at the B&O DuBois shops.

Cover Story—New Midget Surfacer speeds track work p.14

The Nordberg device detects and measures imperfections in surface. It also indicates variations in track cross level.

Railroads cite radio needs p.19

There's every indication that the industry's steadily growing use of radio will continue, the FCC has been told.

War-readiness: Suppliers' view p.20

RPI witnesses have given a House subcommittee a "yes, but" answer to the question of whether railway suppliers could cope with a national emergency.

First-half '59 net tops '58 ..... p.21

Six-months' net income reports show that nearly all railroads are doing a lot better this year than last—but many are still lagging behind 1957. The steel strike clouds prospects for the second half.

Brake inspection modified p.22

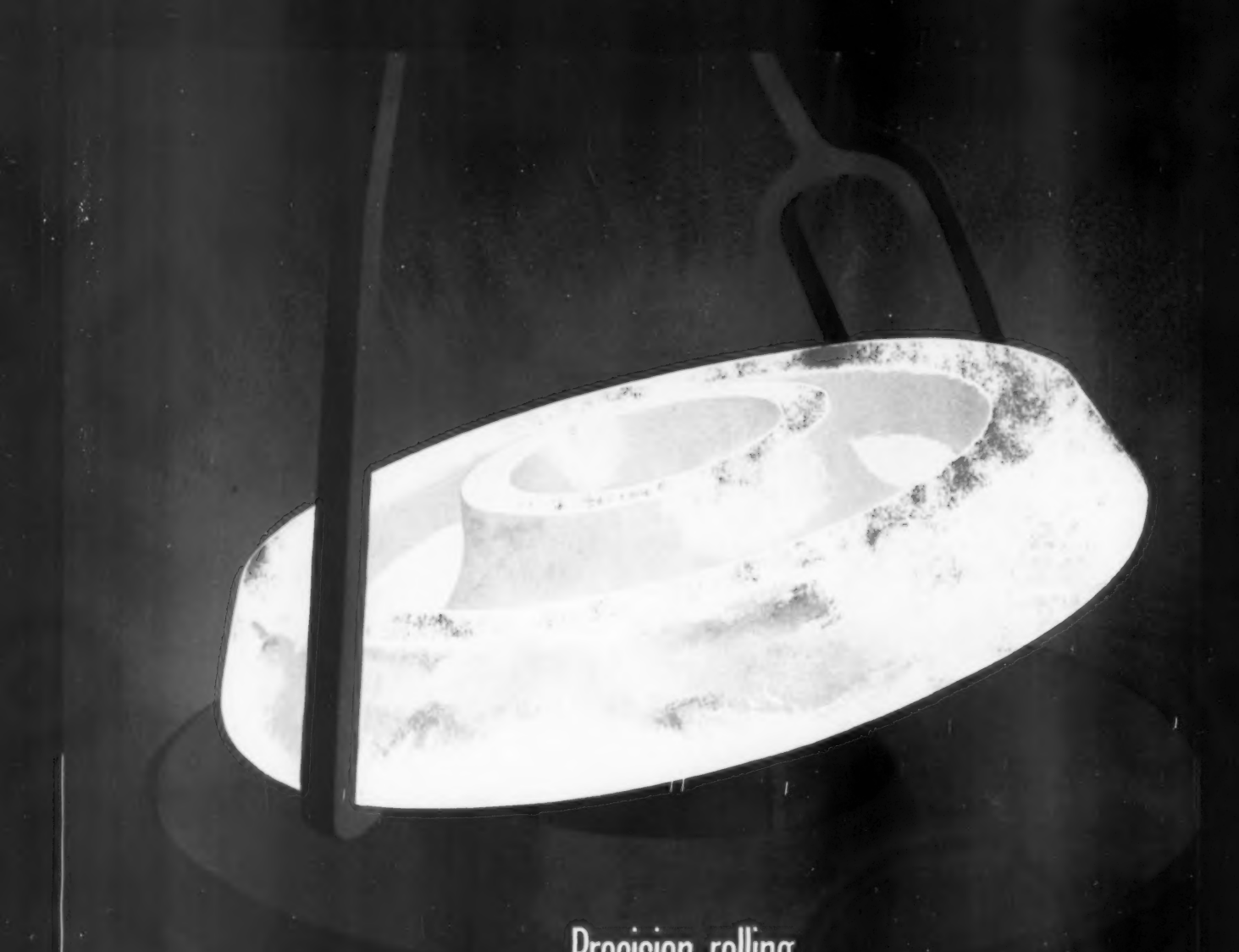
The ICC has changed the Brake Inspection Act of 1958. The modification allows the Commission to permit operation of trains for distances greater than 500 miles without intermediate brake inspection.

Cover Story—Job standards can save money p.23

As the drive for greater efficiency continues, railroads find they need to know what optimum performance is. Work standards can provide this cost-cutting information.

Two big rail systems proposed p.32

P&LE President John W. Barriger has suggested the creation of two transcontinental systems similar to Canada's. If



Precision rolling puts extra mileage in Edgewater wheels

The forged wheel blank shown above is about to be rolled and expanded to final rim contour and size on the Edgewater Wheel Rolling Mill—the most powerful mill of its kind in the world. The rolling process, plus advanced metallurgical techniques account for the extra mileage of Edgewater Wheels.

RMI MEMBER

Edgewater Steel Company

P. O. BOX 478, PITTSBURGH 30, PENNA.

Week at a Glance cont.

Current Statistics

Operating revenue	
5 mos., 1959	$4,126,075,254
5 mos., 1958	3,743,065,625
Operating expenses	
5 mos., 1959	3,229,846,917
5 mos., 1958	3,105,437,309
Taxes	
5 mos., 1959	438,663,308
5 mos., 1958	349,275,298
Net railway operating income	
5 mos., 1959	324,696,605
5 mos., 1958	166,173,746
Net income, estimated	
5 mos., 1959	247,000,000
5 mos., 1958	75,000,000
Average price railroad stocks	
July 28, 1959	112.22
July 29, 1958	85.66
Carloadings revenue freight	
Twenty-nine wks., '59	17,866,333
Twenty-nine wks., '58	15,838,271
Freight Cars on order	
July 1, 1959	40,973
July 1, 1958	27,757
Freight cars delivered	
6 mos., 1959	18,272
6 mos., 1958	29,545

Advertising Sales Department

Duane C. Salisbury—executive vice president, director of sales

New York 7, N. Y., 30 Church st., WOrth 4-3060
J. S. Vreeland—vice president; P. T. Baker—district manager; J. C. Lyddy; W. E. Glasby

Chicago 3, Ill., 79 W. Monroe st., RAndolph 6-0794
J. R. Thompson—vice president; J. W. Crossett—district manager; J. D. Dolan—district manager

Cleveland 15, Ohio, 1501 Euclid ave., MAin 1-4455
H. H. Melville—vice president; H. M. Blunt—district manager

Philadelphia, Pa., Jericho Manor, Jenkintown, Pa., TUrner 7-4526
W. E. Glasby—district manager

Pittsburgh 19, Pa., Suite 203, Carlton House GRant 1-8186
C. J. Fisher—district manager

Atlanta 9, Ga., 22 Eighth st., N. E., TRinity 2-6720—J. S. Crane

Dallas 19, Tex., 3908 Lemmon ave., LAkeside 2322—Joseph Sanders

Los Angeles 17, Cal., 1336 Wilshire blvd., HUbbard 3-0390
Bayne A. Sparks—vice president

San Francisco 11, Cal., 244 California st., EXbrook 7-4990
D. S. Clark—district manager

London E.C.1, Eng., 8/9 Clerkenwell Green
Sibley-Field Publishing Co., Ltd.

Frankfort am Main [16], West Germany
Wittelsbacher Allee 60
Georg J. Linder, Continental European Representative

Subscription to railroad employees only in U.S. possessions, Canada and Mexico, $4 one year, $6 two years, payable in advance and postage paid. To railroad employees elsewhere in the western hemisphere, $10 a year. In other countries, $15 a year. Single copies 60¢ except special issues. Address all subscriptions, changes of address, and correspondence concerning them to Subscription Dept., Railway Age, Emmett St., Bristol, Conn.

Circulation Dept.: R. C. Van Ness, Director of Circulation, 30 Church St., New York 7, N. Y. POSTMASTER—SEND FORM 3579 to EMMETT ST., BRISTOL, CONN.

Printed at the Wilson H. Lee Co., Orange, Conn.

the railroads don't consolidate voluntarily under private ownership, he fears, they'll have to do so involuntarily—under government ownership.

The Action Page—Why Conductor Boggan is happy p.38

Mr. Boggan, a Santa Fe employee, takes a constructive attitude toward his job. If more and more railroads can find the means to generate this attitude in their employees, the entire industry will go forward.

Short and Significant

New Jersey's commuter-aid plan . . .

went before the state legislature last week. Initial reaction of both houses to the plan—which would provide up to $640 million in New Jersey Turnpike profits for commuter aid, principally to railroads—was favorable. The Assembly will reconvene Aug. 10 and the Senate Aug. 31 to give final consideration to the plan. If the legislators approve, it will go before the voters in a referendum Nov. 3.

Eastern railroads would route . . .

all LCL traffic for a one-year trial period, under a proposal just docketed by their Traffic Executive Association. The proposal, TEA says, would mean improved and expedited service for shippers; better car utilization for railroads. There would be no change in rates, but of course ICC approval of relief from the routing provisions of the Interstate Commerce Act (Section 15, Paragraph 8) would be necessary.

Persistent delays . . .

in getting increased Seaway traffic through the Welland Canal are stimulating studies either of a new canal, or of "twinning" existing single locks. Meantime, shippers of ore, grain and coal are seeking priority through the canal for their pet freight.

Something new in agreed charges . . .

has shown up in No. 735, effective Aug. 10. The charge covers movement, via Canadian National, of 90% of all freight between Steel Co. of Canada's McMaster Works at St. Antoine, Que., and the same company's Notre Dame Street, St. Henry and Dominion plants at Montreal. New wrinkles are short distance (30 miles) and inter-plant nature of the traffic—which makes it a virtual switching move; and the tariff basis of $60 per car, flat, in lieu of the normal method of charging by actual weight with carload minimum.

"Safety" POWER and CONTROL SYSTEMS

...Unequalled Performance...Low Cost Maintenance

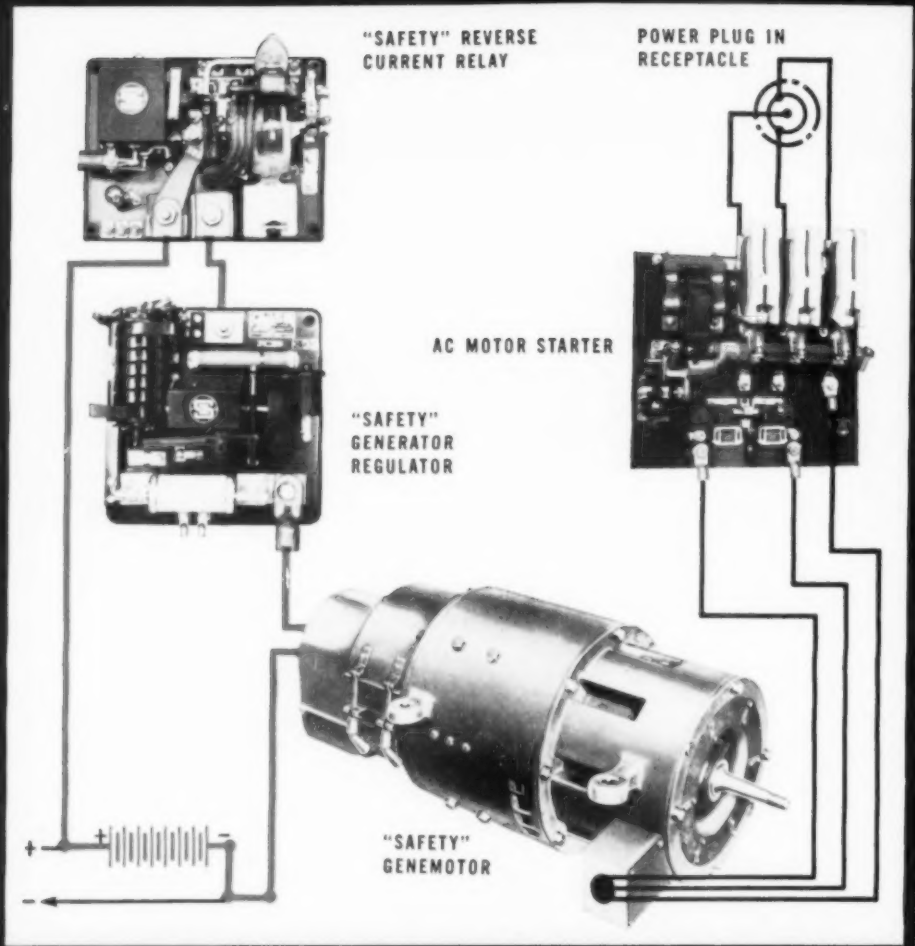
"SAFETY" GENEMOTORS...

are unsurpassed power plants for modern passenger cars

Designed and precision manufactured for long life with low cost maintenance . . . "Safety" Genemotors include . . .

- liberal use of armature copper and low loss iron to keep electrical losses . . . therefore heating . . . at a minimum
- armatures insulated with Class B material and mounted on shafts of the best alloy steel procurable
- dc armature, ac rotor and cooling fan easily removable as independent units
- all parts dynamically balanced individually before assembly on the shaft . . . assuring full interchangeability
- an automatic polarity reversing switch . . . eliminating maintenance of an additional generator necessary when an exciter is used

"Safety" Genemotors are available in capacities of 25, 30 and 35 kw and in 40, 80 and 140 volts nominal ratings, with 20 or 32 HP AC, 60 cycle, 220 volt motors . . . 12 to 20 kw output on standby.



"SAFETY" CONTROL EQUIPMENT...

- provides constant voltage regulation and positive current limit for maximum Genemotor protection
- lengthens battery life
- is compact and automatic
- requires minimum locker space
- is simple in design . . . requiring little maintenance . . . thereby reducing labor costs

"SAFETY" GENEMOTORS and CONTROL EQUIPMENT PROVIDE...

- constant voltage power for all air conditioning electrical equipment and lighting
- full output at very low train speeds . . . assuring quick power availability for re-charging low batteries while cars are enroute
- standby power in excess of requirements for pre-cooling cars and battery charging

Over 5,000 "Safety" Genemotor and Control Equipment applications on railroads throughout the United States, Canada and Mexico are actual proof of unparalleled performance in service.

Safety ELECTRICAL EQUIPMENT CORP.

FORMERLY ELECTRICAL DIVISION OF SAFETY INDUSTRIES, INC

NEW YORK · CHICAGO · PHILADELPHIA · RICHMOND · ST. LOUIS · SAN FRANCISCO · NEW HAVEN · MONTREAL

Factory and Offices: 1187 DIXWELL AVE., NEW HAVEN 14, CONN.

"SAFETY PRODUCTS INCLUDE: Air-Conditioning Equipment ● Genemotors ● Generators ● Fans ● Regulators ● Blower Units Switchboards ● Motors ● Motor Alternators ● Dynamotors ● Motor Generators ● Dual Voltage MG Sets

'Full-Crew' Laws Gain Ground

► The Story at a Glance: The railroads have lost ground on two fronts in their fight against "featherbedding by legislation."

• Wisconsin railroads lost a prolonged battle to prevent application of the state's 50-year-old "full-crew" law to diesel powered trains when Gov. Gaylord Nelson signed a new crew bill into law—"with reluctance."

• A few days earlier, California carriers were hit with a bill which requires employment of a fireman on diesel locomotives over 90,000 lb. The measure slipped through the legislature in the dying days of the session, was signed by Gov. Edmund (Pat) Brown after a public hearing.

In signing "full-crew" legislation which two previous governors had vetoed, Wisconsin Governor Nelson commented that "this legislation is inadequate to meet the problem and I sign it with reluctance."

"The whole question of technical safety regulation of our public transportation is beyond the competence of the legislature," said Governor Nelson. "The legislature should set a broad policy as to safety, but the execution of it should be in the hands of a regulatory body, i.e., the Public Service Commission."

Whatever the governor's reservations, the impact of the new Wisconsin law on the railroads is clear. It will force the carriers to employ:

• Engineer, fireman, conductor and two brakemen for passenger trains of more than three cars.

• Engineer, fireman, conductor and two brakemen for freight trains of three or more cars operating outside yard limits.

C. A. Hummel, chairman of the state railroad association, charged that the governor "did not act in the best interests of the citizens of Wisconsin, including railroad union members, when he signed the train crew bill. . . . The Interstate Commerce Commission only recently pointed out the adverse effect of such laws and the need for their repeal by state legislatures. Wisconsin has done just the opposite by adding featherbedding requirements rather than repealing them."

Mr. Hummel declared that the new law, "in requiring railroads to add unneeded employees to their trains, will cost Wisconsin railroads several hundred thousand dollars annually—and unnecessarily."

Railroad union leaders "who forced this bill through the legislature," Mr. Hummel warned, "will find that in trying to artificially create new jobs they are accelerating the way to less jobs while the public will have lost more trains."

(One road—C&NW—has already cited the added cost as an important factor in petitioning for the removal of four passenger trains.)

The association chairman also warned of the impact of the law on Wisconsin industry.

"Because the state can now dictate to an industry how many employees it must hire is hardly an inducement for new industry to locate in the state," he said.

One railroad officer noted that the extra brakeman was the major factor in the fight over the bill. But the wording of the act also appears to freeze the job of diesel fireman.

Wisconsin roads, it was indicated, have been assigning crew members on a basis of the work to be performed, adding a second brakeman where he was needed. Now, one carrier spokesman commented, legislation has replaced managerial discretion.

Governor Nelson called attention to provisions of the old "full crew" law, which—by interpretation of the state attorney general—did not apply to diesel-powered trains. Present statutes, the governor said, "contain a no-man's land insofar as the jurisdiction of the Public Service Commission to regulate in the interest of safety is concerned."

The governor suggested that safety regulations be transferred to the PSC—although the commission would need a substantial increase in personnel to handle the added responsibility.

The Wisconsin "full-crew" law was one of four union-backed bills which the railroads fought through the current session. The other three measures died along the way. One would have prevented the carriers from making economy moves regarding station agency service; another would have barred the roads from making any changes in facilities or services unless affected employees were guaranteed as much as four years' pay; and the third would have required the railroads, along with

Up and Over Goes the Container

Clark Equipment Co.'s new "Van Carrier" can carry a 25-ton freight container over a loaded highway trailer. The unit can drive over a string of trailers or flat cars to pick up a container, and can stack them two high. It was developed by Clark's Industrial Truck Division to speed the loading and unloading of containers (RA, July 27, p. 57.)

airlines and express companies, to pay their employees weekly.

In California, Senate Bill 944—amending a "full-crew" law originally enacted in 1911—was signed into law despite strong railroad and shipper opposition. The law requires a diesel fireman in all diesel locomotives over 90,000 lb.

At a public hearing called by Governor Brown, strong opposition to the law was expressed by Southern Pacific and Santa Fe officers, and by witnesses representing agriculture and the canning, construction and cement industries.

The railroads' main point was that the diesel-fireman issue was a subject for labor-management negotiations—not legislation. The railroad witnesses said that the brotherhoods—in urging the legislation during the current moratorium on changes in labor agreements—were guilty of a breach of faith. The unions' principal claim at the hearing was that a fireman was necessary for safety reasons. The railroads, in reply, stressed the findings of a Canadian Royal Commission to the effect that the need for firemen on yard and road-freight diesels had vanished.

California's old "full-crew" statute, like Wisconsin's, carried separate provisions for trains powered by steam and by other forms of propulsion. The law required a fireman on steam locomotives, but provided only for "one electric motorman for each train propelled or run by electricity [and] one motor or power control man for each train propelled by motive power other than steam or electricity." Mississippi law makes a similar distinction between steam and other-than-steam.

A survey of the other 13 states where "full-crew" laws are in effect shows 11 where the fireman's job is specified generally and two (Maine and Massachusetts) where the law is concerned solely with provision of trainmen.

Rail Labor United, Leighty Tells BLF&E

RLE Chairman G. E. Leighty played a theme of labor's unity last week in a fiery address before the Brotherhood of Locomotive Firemen & Enginemen's convention in St. Paul, Minn.

Railway labor today, he declared, "for the first time in its history is 100% united in the RLEA. Moreover, our unity is real, strong, indestructible. Never before . . . have we had such strong economic strength as that resulting from our new-found organizational unity." He warned against a "showdown" on work-rules revision.

Watching Washington *with Walter Taft*

• **A NEW PER DIEM CASE** involving all railroads subject to the Interstate Commerce Act is now on the ICC's docket as No. 33145. It's the Commission's own inquiry into car-rental charges. It, effect, it supplants the long-pending complaint case, No. 31358, which was narrower in scope, but the complaint-case record will be evidence in the new proceeding.

THE INVESTIGATION is the aftermath of court rulings adverse to the Commission's 1955 order in the complaints case. That case was appealed to the courts by the complainants, which included the Boston & Maine, New Haven, Long Island, New Jersey and New York and several short-line roads. The assailed Commission order upheld uniform car-rental charges (now $2.75 per day) which have been fixed under Section 5a Agreement No. 7, a Bulwinkle-Act pact administered by the AAR.

THE U.S. SUPREME COURT, which eventually got the case, sent it back to the Commission without ruling on it—after being assured by the regulatory body that "thorough study" would be given to a time-mileage formula for setting varying per diem rates. Such a formula is proposed by roads complaining against the uniform rental charge.

THE THREE-JUDGE FEDERAL COURT which set aside the Commission's order had called for this "thorough study." To it, the time-mileage idea seemed too important for the treatment it got from the Commission—a "brushing aside . . . with little more than a wave of the hand."

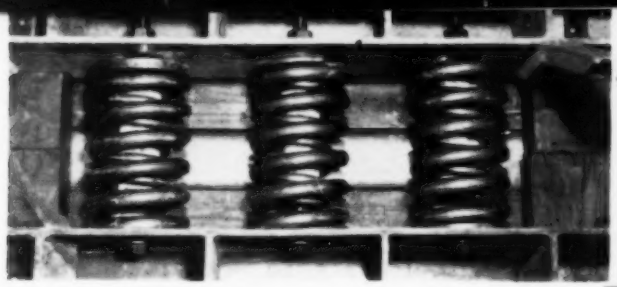
THE TIME-MILEAGE FORMULA is designed to develop tailored per diem rates for each road. They would be constructed by combining each road's mileage factor with a uniform time factor applicable to all roads.

TIGHTENED ACCOUNTING REQUIREMENTS could be a result of the inquiry. One of the investigation's stated objectives is the prescribing of "more detailed forms of any and all accounts necessary to permit accurate computation of . . . per diem charges."

MEANWHILE, the incentive per diem bill, S.1789, is still pending on the Senate calendar. It has a favorable report from the Committee on Interstate Commerce and clearance from the policy committee of the Senate's Democratic majority. It would permit the Commission to order increases in the per diem rate to promote buying of freight cars.

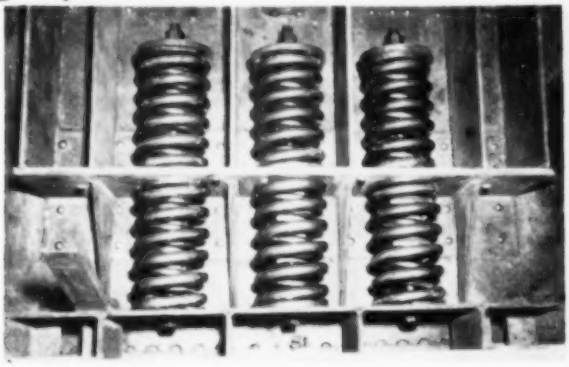
• **THE TRACK-CAR BILL** is getting a legislative history designed to identify it as a "safety" measure with no "make-work" objectives. The bill, S.1425, is supported by the ICC and the Railway Labor Executives' Association. It would give the Commission power to prescribe rules for the operation of track motor cars. The Senate Interstate Commerce Committee's record of hearings has labor representatives saying that nothing in the bill would create a single additional job.

AMENDMENTS to eliminate "full-crew" and other "make-work" threats, however, were called unnecessary by the same labor representatives. The amendments were suggested by senators who seemed to have in mind a provision like that in the bill, passed last year, which gave the ICC authority to prescribe rules for the inspection, testing and maintenance of train brakes. The provision stipulates that brake rules "shall be promulgated solely for the purpose of achieving safety."



SPRING GROUP between two skids is not secured to car; it floats. Springs are same types as those used at outer ends of skids.

END SPRINGS are secured to the buffer assembly. Inner coil of standard locomotive truck spring fits over spring guide made from steel tubing. Bolt extending through assembly is 1¼-in. size.



B&O Improves Coil Steel Cars

Coil steel shipments will get better protection in 100 new Baltimore & Ohio gondola cars.

Built to meet the steel industry's greater demand for this rolling stock, the skid cars have an improved cushioning arrangement developed by the road's mechanical department.

Like many other roads, the B&O has operated coil steel cars for several years. Experience showed that shock-absorbing equipment in these earlier cars was not always adequate. To overcome this deficiency, the B&O designed cushioning equipment which cradles the two loading skids between 15 coil spring groups. The springs are of the same type used on many diesel locomotive trucks. They are all under slight compression when the coil steel skids are installed on the cars.

Skids and buffer assemblies were built at the B&O's Cumberland bolt and forge shop. The skids are designed to hold coil diameters ranging from three to six feet. Hoods for the cars were furnished by the Youngstown Steel Car Corp. and Republic Steel Corp. Average light weight of the 52½-ft cars is 80,500 lb.

The 100 coil steel cars were part of an order for 500 70-ton gondolas. All were produced at the road's DuBois, Pa., shop at a rate of ten cars per day. Fifty cars were equipped with adjustable partitions and three-section roofs for steel bar service. The remaining cars are used as conventional gondolas. Although the coil car assembly is more complicated than the conventional gondola, the same production rate was maintained for both types by altering some of the production steps.

The difficulty encountered in standardizing arrangements of coil cars was discussed by the Car Construction Commitee at the recent AAR Mechanical Division meeting. For example, shippers make frequent changes in the size of material shipped. Also, there is no agreement on whether the coils should be shipped with eyes horizontal or vertical.

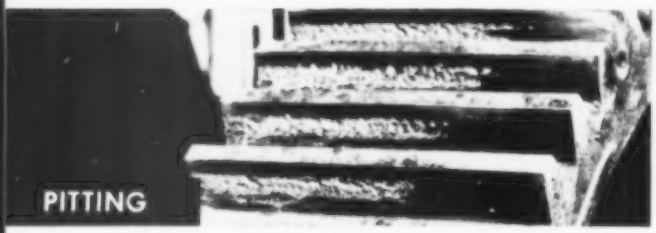
Design improvements, such as those made by the B&O in its new cars, may result in a car acceptable to a majority of shippers. The committee reported that when this happens an attempt will be made to approve an AAR standard method of fitting up these cars.

COIL STEEL GONDOLA CARS were turned out by the B&O's DuBois shop at the rate of 10 per day. As the cars were completed they were equipped with hoods furnished by Republic Steel and Youngstown Steel Car.

GENERAL ELECTRIC SHOWS HOW YOU CAN . . .

Reduce your locomotive gear maintenance costs

CHECK THESE DANGER SIGNS AND MAIL THE COUPON



FOUR DANGEROUS SYMPTOMS of gear wear can be seen above: *Metal fatigue* results from repeated and long-term load application; *pitting* results from heavy overloads and inadequate lubrication; high-temperature metal-to-metal contact through poor lubrication causes *scuffing*; tooth surfaces become *scored* by particles of foreign matter in the lubricant.

GENERAL ELECTRIC LOCOMOTIVE GEARING is as accurately constructed and thoroughly tested as the finest of machinery. Check your gears at regular intervals to prevent them from becoming a total loss—damaged beyond repair. Not only will damaged gears take your locomotive out of service for gear replacement, but defective gearing often causes traction motor failures.

That's why you can save maintenance dollars if you keep a careful watch on the involute tooth profile. When your gearing starts to show excessive deviation from profile, vibrations produced will damage your equipment. **As soon as profile deviation enters danger area shown on chart above, it's time to let G.E. save your axle gear through expert reprofiling.**

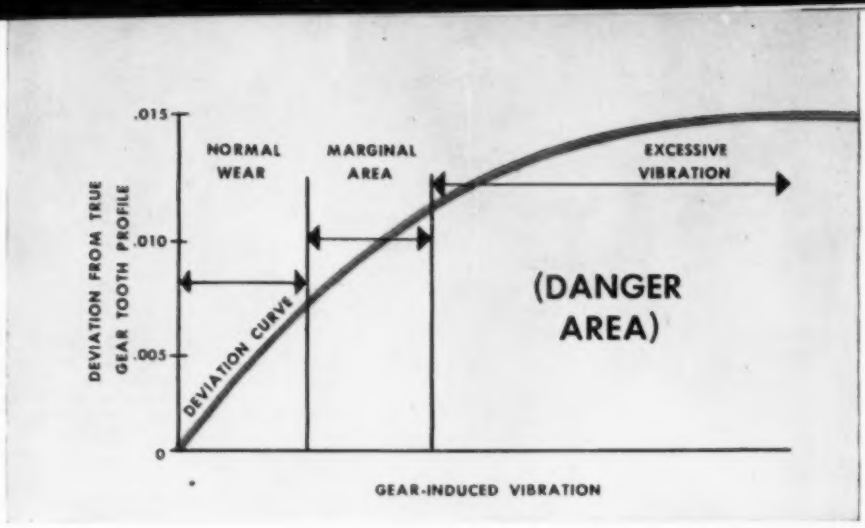
MATERIALS AND PROCESSES SPECIALLY DEVELOPED for transportation equipment are used in manufacturing your gearing. Proper heat treatment assures a tooth surface hard enough to withstand long periods of severe abrasive conditions—yet tough enough to absorb repetitive, high-impact loads. This helps reduce failures and resulting down time for your locomotive. The steel used is a forged, heat-treated carbon steel which provides a hard exterior tooth, blending gradually into a tough, softer, but more flexible core.

STRONG, DEPENDABLE GEARS AND PINIONS form the heart of the locomotive transmission system. The smooth and uniform transmission of driving power from traction motor to axle demands gearing that can stand up to the continual punishment of heavy loads

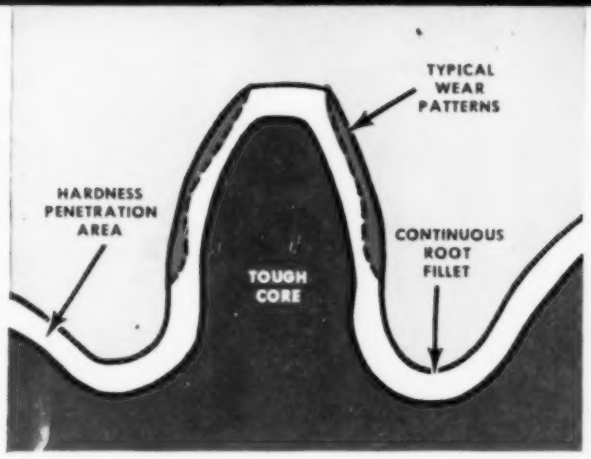
Progress Is Our Most Important Product

GENERAL ELECTRIC

CHART AT RIGHT shows when your gears and pinons are becoming dangerously worn. If the tooth profile has deviated too far from its true configuration, there will be excessive gear-induced vibration. Prompt re-profiling will save your gearing and motor components for many more miles of productive service.



BELOW FOR MORE DETAILS ON WHEN TO RESURFACE



RED AREAS SHOW typical wear patterns on this profile view of G-E gear tooth. Hardness penetration area is a layer of extremely durable, heat-treated carbon steel. Continuous root fillet reduces tooth breakage.

FINAL CHECKS LIKE THIS ONE—using portable involute profile checker—help inspection of tooth profile accuracy.

at high speeds, often combined with sudden starts and stops. To help achieve this high level of performance, the General Electric-designed long and short addendum tooth form and continuous radius fillet provide more strength and longer life. Special protuberance hobbing techniques help to eliminate the danger of grinding cracks in the roots. Special heat-treating techniques also provide a uniform, hard overlayer of steel—containing the desirable compressive residual stresses. G.E.'s manufacturing "know-how," coupled with these advances, helps produce a longer-lived gear to handle today's heavier loads.

When you're thinking of *NEW* gearing—or resurfacing your old G-E gears—contact your nearest Railroad Regional Parts Center or Locomotive Builder. Investigate G.E.'s expert reprofiling service now—before your gears and pinions become too badly worn. General Electric Company, Locomotive and Car Equipment Department, Erie, Pennsylvania.

Section C128-67, General Electric Co.
Schenectady 5, New York

Please send me enlarged version of ready-reference Gear Maintenance Chart (showing types and causes of gear failure). I understand that I am incurring no obligation by mailing this coupon.

NAME _____

POSITION _____

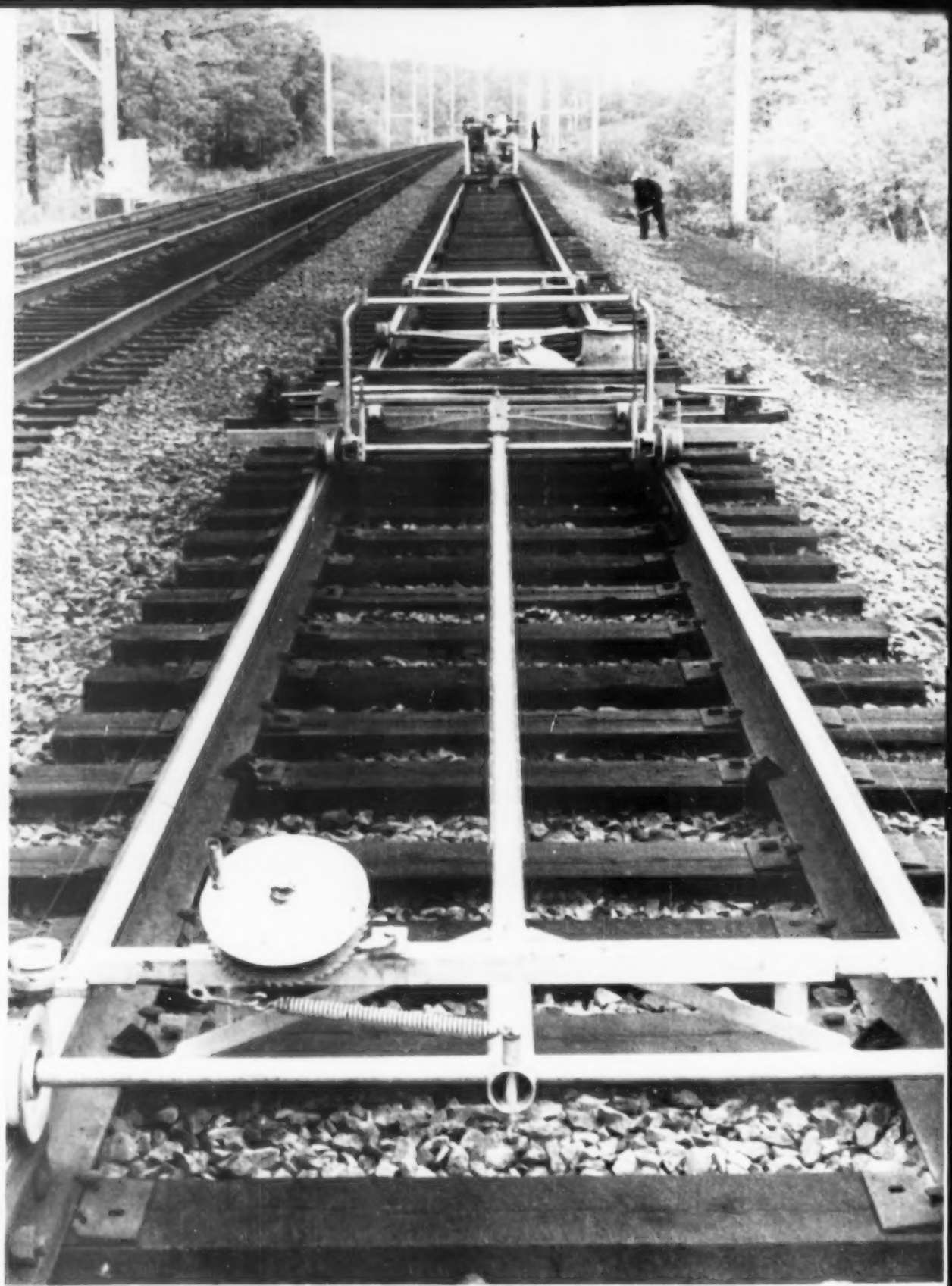
COMPANY _____

ADDRESS _____

CITY _____ STATE _____

Progress Is Our Most Important Product

GENERAL ELECTRIC



TWO BUGGIES in front (background) and one in the rear stretch the two wires a distance of 50 ft. Tray on main carriage is for tools and each side shelf carries a track jack. The entire device is easily pushed by one man.

Midget Surfacer Works Fast

One of the Pennsylvania's track-surfacing gangs has been using a relatively short wire device for "ironing out" any irregularities in surface that remain behind the track-raising operation.

The device is a new Nordberg development called the Midget Surfacer. When pushed along the track it detects and measures any imperfections in surface. A track level carried on the device also indicates any variations in cross level.

The Midget Surfacer is designed for two types of work. When raising and surfacing high-speed main track, it provides a means for checking and maintaining the quality of the track raise behind the power raising operation. Its use for this purpose, according to the manufacturer, permits the raising points to be limited to joints and centers, thus substantially speeding up the raising work. The Midget also is designed for spotting up track which does not require a general raise or the use of production tampers.

The new device bears some resemblance to the Trak-Surfacer in that it relies upon stretched wires and indicators to do the "sighting." It includes a four-wheel carriage which carries a shelf on each side for a hand track jack, a tray for tools and supplies, brackets for carrying a standard track level, and an indicator mechanism. Two two-wheel aluminum buggies ahead of the carriage, and one behind it, stretch two wires a distance of 50 ft. The wires are positioned one over each rail and 8 in. above it.

Each wire passes over the outer end of a pointer mechanism on the four-wheel carriage which is located 20 ft in advance of the rear anchorage. The inner ends of the pointers move on a common scale placed on the rear of the carriage.

If the track surface is on a true plane, both pointers stand at zero on the scale. The two wires and their respective pointers search out surface irregularities in each rail independently of the other. Hence, by merely observing the number of gradations the pointers are off zero, and whether above or below it, trackmen can quickly determine on which side a track jack is to be used and the number of notches to raise the rail. The machine is rolled forward or backward to locate the lowest spot. The hand jack is then inserted at this spot and used to lift the track until the pointer reading is corrected.

The Midget Surfacer was recently seen in operation on the Pennsylvania where, along with other machines, it was engaged in giving a light lift to the No. 2 northbound main track between Gwynn, Md., and Vern interlocking plant. For this work the road was using a gang of 11 men (including a foreman and an assistant foreman), and six work-equipment units. The latter consisted of a Nordberg Tamping Power Jack used in conjunction with a Trak-Surfacer, the Midget Surfacer, a Plasser production tamper and a Nordberg Trakliner used in conjunction with a Line Indicator.

The Trak-Surfacer was set to produce an average track raise of 2 in. by the tamping jack. This machine was being used to raise the joints and centers and bring the track to the desired cross level.

Following behind the Trak-Surfacer came two trackmen pushing the Midget Surfacer. It was rolled along the rails until a low spot was encountered. The device was then moved back and forth until the lowest point was located as shown by the indicators. Then a pin anchor was dropped to the ballast to prevent the device from rolling. The men moved to the side shown to be low, jacked up the rail as necessary to correct the low spot by bringing the pointers to zero on the scale, and tamped the nearest tie.

The following unit was the Plasser tamper. This machine was served by two equipment operators and two trackmen. One of the latter was a watchman who pulled a cord to sound the machine's siren on the approach of trains on any of the main tracks. The other trackmen forked stone ballast to the ends of the cribs where the ballast happened to be low. The production tamper worked continually, making one full insertion at every tie. The two operators spelled each other.

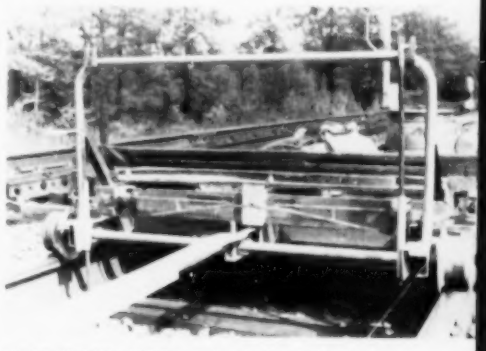
The Trakliner and Line Indicator brought up the rear. This combination was worked by a machine operator under the supervision of an assistant foreman.

This gang also handled the distribution of necessary additional ballast. A Kershaw Ballast Regulator with broom attachment was used for shaping the shoulders and sweeping the ties clean.

No flagmen were necessary for the protection of this outfit from trains on the same track. The superintendent had issued instructions that the gang was to have absolute use of the track. In the event that the track would have to be taken back into service, the gang was equipped with a portable radio-telephone outfit mounted on a push car. A loud siren was provided on the push car for summoning the foreman to the telephone in the event of a call from the dispatcher.

The production of this gang was averaging 1,100 ft per hr of on-track time. Because of travel time, the average daily output was about 6,500 ft.

Before using the Midget Surfacer, the road employed four trackmen for handling track jacks behind the raising operation. The foreman did the sighting. Officers of the road state that two trackmen using the Midget Surfacer do a better job. The results, they say, show up in the superior riding qualities of the track under 80-mph trains.



TWO POINTERS analyze the rails independently of each other. They indicate zero on the scale when the rails are in true surface. The track level is carried to reveal inaccuracies in cross level.

LEAD UNIT of the surfacing gang ► was the Power Tamping Jack which was raising the joints and centers. It was used in conjunction with the Trak-Surfacer for making a lift of about 2 in. Midget Surfacer was operated directly behind the raising operation and ahead of the tamper.

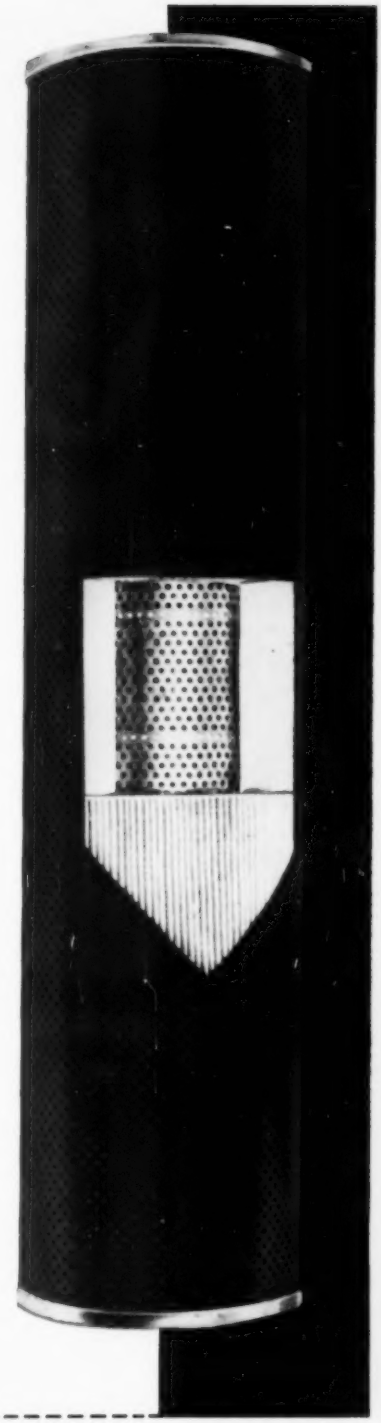
FILTER LUBE OIL
and Save 30% to 50%
You cut direct labor better than 50% because these WIX Porosite Cartridges last more than twice as long. AND – there's NO washing of baskets . . . NO repairing or replacing of baskets . . . NO oil drag out. Loss of oil with ordinary filters can cost you as much as $4.00 per change. WIX Porosite saves all these extras and does a superior job of filtering the oil. You save all the way and every way with WIX!

THROUGH PAPER?

you can...with

wix®

POROSITE® OIL FILTERS



They said you couldn't *do a thorough filtering job, increase the flow rate* and *double filter life* . . . but WIX has done it! NOW . . . backed by months of controlled tests on passenger, freight and yard locomotives – WIX proudly presents another new milestone in Diesel Lubricating Oil Filtration. WIX POROSITE is the fruit of objective research and development . . . an engineering success and an important economic contribution in Diesel Maintenance.

HERE ARE THE FACTS: WIX POROSITE provides higher flow rate with controlled particle retention. You get much longer filter life and complete uniformity between cartridges. Cageless construction eliminates need for filter baskets . . . hence, you save in labor and save on oil drag out.

TEST WIX POROSITE–NOW!

These amazing oil filter cartridges will soon be available in car load lots, but you may now order TEST QUANTITIES for immediate shipment to prove conclusively that you must have WIX POROSITE in your lubricating oil filters. Act now!

THE OLD WAY

1. Open Filter Case
2. Remove Filter Basket containing Cartridge
3. Remove Cartridge from Basket
4. Transport from Locomotive to Cleaning Room
5. Wash Basket in caustic solution
6. Rinse Basket in clean water or with steam hose
7. Dry Basket
8. Install New Cartridge in cleaned Basket
9. Transport from Cleaning Room to Locomotive
10. Install Basket in Filter
11. Close Filter Case

THE WIX WAY

1. Open Filter Case
2. Remove Used Filter
3. Install New Cartridge
4. Close Filter Case

wix® FILTERS

WRITE TODAY FOR ALL THE FACTS—GET THE NEW WIX CATALOG TODAY!

Wix Corporation (Industrial Division) Dept. RA
Gastonia, N. C.

Kindly send me your complete catalog and full details on WIX POROSITE Lube Oil Filters

Name_____

Railroad_____

Address_____

City_____ Zone_____ State_____

WIX CORPORATION • GASTONIA, N.C.

In Canada: Wix Corporation Ltd., Toronto

SALES OFFICES Jacksonville, Fla. · New York, N.Y. · Chicago, Ill. · St. Louis, Mo. · St. Paul, Minn. · San Francisco, Cal.

WAREHOUSES Gastonia, N.C. · New York, N.Y. · St. Louis, Mo. · Des Moines, Ia. · Sacramento, Cal.

World's Most Versatile Tamper

NEW

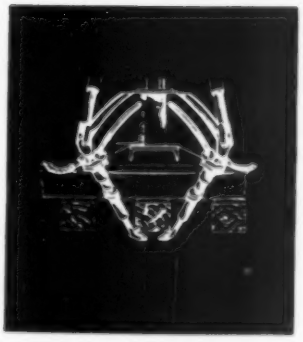
McWilliams MULTI-PURPOSE 8

A PRODUCTION TAMPER

A SPOT TAMPER

A JACK TAMPER

With ballast compaction equal to the McWilliams Production Tamper, the machine tamps under the tie in sixteen positions—each tool tamping in two places. Speed in production tamping: up to 4 ties per minute. *As a Spot Tamper*, split head with integral jacks assures effective tamping of joints, low spots, switches and in yard and terminal work. *As a Combination Jack and Out-of-Face Tamper*, the machine will operate as a jack tamper in making out-of-face raises, finish tamping ties at jacking points. It then can go back and finish tamp the remaining ties —making possible out-of-face tamping with one machine, an operator and a foreman for sighting the raise. *Ask for details.*



Tools tamp in the same pattern as the McWilliams Production Tamper

Railway Maintenance Corporation

PITTSBURGH 30, PA.

Track Stays up Longer with a McWilliams Tamper

Railroads Cite Radio Needs

Radio usage on the railroads has grown steadily and impressively in a little over 10 years. As of December 31, 1958, the railroads had 33,706 licensed radio units. The breakdown: 204 railroads licensed to use 1,342 base stations and 20,256 mobile units for train service; and 876 base stations and 11,232 mobile units for yard-terminal service. These figures were cited by R. E. Johnson, CRI&P operating vice-president, at a recent Federal Communications Commission inquiry into radio usage.

"These statistics alone indicate that radio communication . . . has become an integral part of railroad operations," testified Mr. Johnson. "I have every reason to believe that additions to the railroad radio equipment will continue at an accelerated rate.

"At the present time our maximum requirement for radio frequencies is in large terminals where requirements for train and yard-terminal radio occur simultaneously in the same geographical area . . . Railroads cannot continue present use of radio on fewer frequencies than now allocated. I therefore urge the Commission to continue without change the present allocation of frequencies for railroad use."

Because there is only so much air space for two-way radio—25 to 890 mc—the FCC is holding a statutory inquiry (Docket No. 11997), giving radio users a chance to air their views. Among those presenting testimony are the railroads, who contend that their use of two-way radio provides for safe and efficient operation which directly benefits the public. This interest will be served, the railroads contend, by the continuance of the present frequency allocations for exclusive railroad use. These are frequencies between 160.215 mc and 161.565 mc and four channels in the 452 457 mc band.

L. R. Thomas, Santa Fe system communications superintendent, and chairman of Committee 4, Radio and Allied Communications, Communications Section, AAR, was another witness. He said a survey of the railroads using or having an interest in radio showed that the present allocation of frequencies should be sufficient to meet present railroad requirements. To meet all requirements in congested terminals such as Chicago, Kansas City, St. Louis and New York, the railroads will have to utilize some frequencies under technical and geographical restrictions, in order to avoid harmful interference with other frequency assignments.

Mr. Thomas said the growth of radio usage is steady, and there is every indication that it will continue. "As the railroads obtain experience in radio communications, new uses are being found. For example, radio is used in connection with maintenance - of - way operations and for automatically reporting to a train crew the detection of hotboxes, dragging equipment, rock slides, flash floods and similar potential hazards.

"Railroad use of radio in the 25 to 890 mc range is primarily for communication between fixed points and mobile units and between mobile units. Radio is the only type of communication which will adequately serve this requirement . . . The railroads request that in this proceeding the Commission continue unchanged the present allocation to railroads in the 25 to 890 mc range."

The Southern is the largest railroad user of radio, having approximately 3,000 radio transmitters in daily use. E. M. Tolleson, assistant vice president, testified that "radio usage is now completely integrated with [Southern's] railroad operation. On Southern Railway the use of radio contributes directly to the safety of the traveling public and to the safety of railroad employees. We believe that Southern's excellent safety record reflects its widespread use of radio . . . The safety aspects alone would justify the costs . . .

"It is unthinkable that the use of railroad radio should be curtailed in any way, and we believe that the sharing of channels with other railroads or any other industry would inevitably lead to unsafe operations and would result in curtailing use of this invaluable tool . . . It is essential that each railroad have its own clear channel.

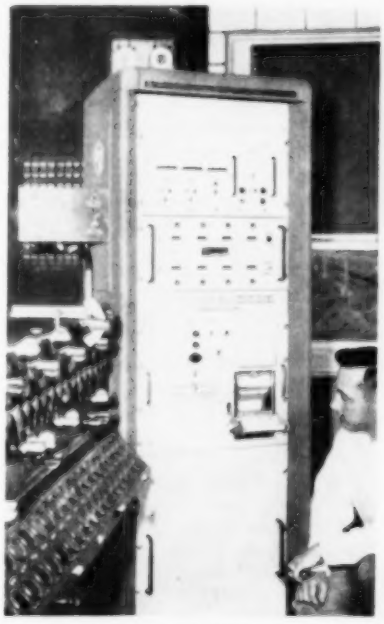
"Because radio usage is part and parcel of all its railroad operations and because safety and efficiency, in all their facets, are implemented by radio usage, the Southern . . . and its affiliated companies request that the FCC continue in effect the existing block of channels in the 160 mc band allocated for railroad radio. We believe that adequate clear channels are absolutely essential to safe, reliable and efficient railroad operations."

Automatic Hotbox Alarm Tested

More than 70 railroad executives and chief signal officers recently saw Servo Corporation of America demonstrate its new hotbox detector automatic alarm and carrier system. The demonstration took place at Edgewood (near Baltimore), Md., on the Pennsylvania.

The linear transistorized carrier system brings the detector signals from a remote field location into a convenient office and reproduces them accurately. The carrier may be used up to 40 miles on open line and 15 miles in cable without a repeater. Upon detecting a journal box heated above a preset (adjustable) level, a light is illuminated and an automatic device counts axles from the overheated journal to the rear of the train.

Up to four such hotboxes may be indicated and counted on each side of the train. The locomotive and most passenger car journals are automatically excluded from the alarm system, though recorded on tape. Exclusion is effected from truck wheel base determinations. A single switch resets all counters to zero and extinguishes the alarm lights. The PRR has added a control panel on the left-hand side of the machine. This will tie the signal system into the automatic hotbox alarm, causing a signal to be set to stop and an audible alarm sounded upon detection of a hotbox.



SERVO USES CARRIER to bring hotbox signals to axle counters on PRR.

War-Readiness: Suppliers' View

► **The Story at a Glance: Railway suppliers gave a "yes, but" answer last week to the question of preparedness for a national emergency.**

The industry has surplus capacity now. Production could probably be doubled, within existing facilities, if the need arises (barring "insurmountable problems of manpower, material supply and the diversion of our plants to military production").

Robert A. Carr, chairman of the Railway Progress Institute, summed up the situation in testimony before the House Armed Services Committee's subcommittee on transportation. His statement and the written submissions of three other supply company officers were guardedly optimistic about the industry's capabilities. But they all pointed to the need for a better atmosphere in which the railroads could operate, an atmosphere which would permit a build-up of facilities now—not in the hectic days following E-Day or M-Day.

In the event of a national emergency, here's how the railway supply industry would shape up, according to a survey of the RPI's approximately 100 member companies:

● Locomotive builders could turn out about 250 units per month, or 10 per day, on a six-day work week basis—provided that there is six months' advance notice of the need for maximum production, provided that necessary materials are available in sufficient quantity, provided the work force can be increased by 5,000 to 6,500 employees.

● Commercial freight car builders could reach maximum production of 115,000 cars per year with existing facilities on a six-day operating basis—if materials and manpower are available, if some standardization of design is achieved, if there's no diverson of plant facilities to war production, if capital equipment worn out by the strain of maximum production can be replaced.

● Freight car component parts manufacturers don't see any great difficulty in keeping pace with any needed car construction program. A 10% to 15% increase above present maximum capacity could be accomplished within the limits of present plant locations—but "such an expansion could be attained only at a very substantial cost . . . and would require at least a year's time to accomplish."

● Manufacturers of signal equipment could increase production up to 100%.

● Manufacturers of track maintenance equipment indicate that production could be "very greatly" expanded.

● Suppliers of ties and timber products report ample facilities, provided sufficient lead time—60 days—is given.

The survey points up the supply industry's readiness. It also points up an existing surplus capacity which could produce trouble.

RPI Chairman Carr (president of Dearborn Chemical Co.), put it this way in a submission which accompanied his oral testimony:

"At the moment, the production capability of the railway equipment and supply industry is more than adequate for present or anticipated demands. Our trouble now is, frankly, surplus capacity."

The supply business, he told the subcommittee, "has always been plagued by a 'feast or famine' volume of business . . . The industry is now in the midst of a period of fairly high production after having suffered one of the most disastrous years in its history. That railway supply companies are able to survive these wide fluctuations in business volume is, in itself, indicative of the basic stamina that the industry possesses.

"However, it should be pointed out in this connection that many companies have embarked upon programs of diversification, some of which are well advanced at this time. This trend, which is a direct result of the 'feast or famine' nature of railway purchases, if continued, will eventually endanger the mobilization support which the industry can provide for the railroads."

RPI reaffirmed its position that action should be taken "as soon as possible" to permit the railroads:

● To set aside construction reserve funds.

● To write off their investments in locomotives and cars in 15 years and in other facilities in a maximum of 20 years.

Mr. Carr was the only supply industry witness at the current hearings. He submitted additional statements by John W. Scallan, RPI vice chairman and president of Pullman-Standard division of Pullman, Inc.; C. E. Grigsby, chairman of the RPI committee on emergency planning and vice president-general manager of the Transportation Equipment division, American Steel Foundries; and R. Arthur Williams, past chairman of RPI and president of the Standard Railway Equipment Manufacturing Co.

Mr. Scallan also stressed the all-or-nothing nature of freight car orders (ranging from 6,000 in 1949 to 162,000 in 1955) and the predicament which it produces for the car builders.

The figures show, he added, "that there is no regular pattern or cycle to the fluctuations. There does not seem to be any combination of statistical indicators on which to base scientific forecasts of new orders. Obviously, with the ever-increasing necessity for some year-to-year stability in orders, the freight car building business is one that does not offer its owners any feeling of complacency. As a consequence, almost every commercial car builder has diversified to some extent in recent years."

Although plant capacity is sufficient for peacetime demands, Mr. Scallan continued, "the situation in the event of emergency would depend on a number of variables about which it is difficult to be specific at this time. The first thing that should be done is to set some production goal of quantities and types of cars required. With such a goal the industry could make a far more intelligent estimate of its ability to meet an emergency."

Joint Committee Proposed

Mr. Grigsby suggested that "plans might be made to appoint a joint committee from railroad, military and railway equipment sources to consider freight car construction as a preparedness measure. The need for cross-checking among military ordnance, military transportation and civilian railway needs is already apparent."

Neither he nor Mr. Scallan saw much advantage in stockpiling. Mr. Grigsby reviewed a previous RPI committee report which found it unfeasible. "In our judgment," he noted, "very little could be gained by stockpiling of parts, and the only feasible 'stockpile' would be in the form of completed freight cars in service."

Mr. Scallan contended that stockpiling of cars or material "on any scale would be uneconomical. The best answer to providing sufficient care to meet any emergency is to provide an atmosphere of economic well-being for the nation's railroads so that they will be in a position to order and maintain adequate fleets of cars on a year-to-year basis."

Only in one area, Mr. Carr reported, does stockpiling seem advisable—signal systems and materials. Because the "number of manufacturers capable of

Is Given

producing complete signal systems is limited, and considering that electronic materials can be expected to be in critical supply in an emergency," he noted, "it might be desirable to stock certain selected supplies at strategic points . . . Consideration may well be given also to the strategic stocking of readily substituted complete control units. Such a program could only be undertaken by the government."

Mr. Williams hailed the subcommittee inquiry and the results it could produce.

"We believe that your deeper concern is to uncover ways and means by which transportation adequacy can be reasonably assured when E-Day or M-Day comes. We believe that you would complete these hearings with great satisfaction if the railroads demonstrate that they are prepared now to handle the peak loads of national defense and the civilian needs of our country . . . and we could tell you that we have the capacity to supply all the additional locomotives, cars and other facilities that might be required. In this case, you could report with confidence that one vital arm of national defense—rail transportation—is truly ready to meet any foreseeable need.

"But frankly . . . this is impossible, in our opinion. We do not know when the day of emergency or mobilization will come. We do not know what the subsequent demands for material or manpower or arms production will be. And we have only a hazy idea of the total size of the transport load which will have to be carried to support national defense and our civilian economy. All we can surmise is that our rail transportation plant is not now prepared to handle a sudden and sizeable increase in traffic, either freight or passenger . . . and that it will take precious time, a large volume of strategic materials and ample manpower to produce enough equipment and supplies to overcome this inadequacy."

The construction reserve and a faster tax writeoff, he indicated, would go a long way toward correcting "this potentially dangerous situation."

Mr. Carr's testimony before the subcommittee and the submission of the written statements were scheduled for Thursday in Washington. Railroad witnesses—AAR President Daniel P. Loomis, GN President John M. Budd, ACL President W. T. Rice and PRR President James M. Symes—were slated to appear at Friday sessions.

Six-Months' Earnings*

ROAD	1959	1958	1957
Atchison, Topeka & Santa Fe	$30,699,584	$21,428,145	$25,521,876
Baltimore & Ohio	10,042,484	6,371,617	12,352,789
Chesapeake & Ohio	24,704,000	18,950,000	32,347,000
Chicago & North Western	15,098	—2,321,490	—598,442
Chicago, Milwaukee, St. Paul & Pacific	1,650,185	—1,648,728	—906,749
Chicago, Rock Island & Pacific	5,048,920	3,227,218	5,019,844
Denver & Rio Grande Western	4,145,253	3,622,843	6,425,012
Erie	—160,804	—4,885,399	1,799,124
Great Northern	10,637,000	5,823,000	10,853,650
Gulf, Mobile & Ohio	1,218,959	326,011	1,376,470
Illinois Central	5,751,537	5,477,867	7,281,580
Louisville & Nashville	6,233,339	4,457,730	9,985,985
Minneapolis, St. Paul & Sault Ste. Marie	—463,987	—566,640	1,018,692
New York Central	10,128,634	—25,565,920	9,388,583
New York, Chicago & St. Louis	7,143,355	3,156,573	7,089,333
New York, New Haven & Hartford	—3,277,543	—4,962,496	—194,905
Northern Pacific	9,364,612	5,601,669	7,378,141
Pennsylvania	6,298,700	—25,353,012	12,271,842
Seaboard Air Line	8,450,402	7,375,365	9,826,927
Southern	15,500,000	14,337,000	17,444,018
Texas & Pacific	1,658,193	1,091,959	2,538,432
Union Pacific	30,247,928	29,748,016	33,819,986
Western Pacific	2,583,785	1,383,884	2,395,760

*From net income reports available as this issue went to press.

First-Half '59 Net Tops '58

It's a rare railroad that isn't showing healthier profit figures now than it displayed at the end of the first six months of last year.

But 1959's first-half figures for a lot of roads are still under 1957's. Only a limited number are doing as well—and even fewer are doing conspicuously better—than they did two years ago.

Railroad officers, moreover, aren't being especially flamboyant about predictions for 1959's second half. Their principal worry is the steel strike, now in its third week, with no visible sign of settlement.

Some roads which were deep in the red at this time last year are solidly in the black now. Others, which weathered the 1958 recession on the right side of the ledger, are posting sizable percentage gains in net income.

Look back two years, however, to the fairly "normal" year of 1957 and the picture isn't quite so bright. Some big roads—Santa Fe, for example, and Northern Pacific—have shown substantially higher earnings over 1957. Milwaukee has turned a first-half '57 deficit into a first-half '59 profit. So has North Western—by the slimmest of margins.

But other normally good earners—Chesapeake & Ohio, Erie, Illinois Central, Louisville & Nashville, Soo Line, Pennsylvania, Rio Grande—aren't doing so well. And they have plenty of company.

Second half prospects are clouded. Western grain carriers, many of which normally do better in the second half of any year, may show substantial improvement. But roads which depend to any degree on steel traffic—raw materials, finished product, steel-using manufactured goods—may find heavy going if the three-week-old steel strike should be unduly prolonged.

Only one thing seems wholly certain—payroll taxes will be higher because of Congressional increase of retirement and unemployment benefits.

'Windmills' Light P&N Cabooses

For $150 each, the Piedmont & Northern has converted oil lamps and marker lights to electric with wind-driven generators on nine cabooses. Each caboose has four lights inside. Exterior receptacles are at each of the four corners so that electric marker lights may be plugged in at either end. The electrical system consists of a wind-driven generator (weather vane with 6-blade propeller) mounted on the caboose roof. The generator charges a 6-volt automobile-type storage battery. Service has been excellent with negligible maintenance, says the P&N. In local freight service where the work is done during darkness, the batteries are removed and charged from an outside source. Normally batteries in through freight service will stay fully charged from the use of the wind-driven generator. Some through freights operate 90 miles, all at night.

Brake Inspection Modified

Operation of trains for distances greater than 500 miles without intermediate brake inspection could be authorized by the ICC on the basis of a modification which the Commission recently made in the Power Brake Act of 1958. Simultaneously, however, the Commission denied requests for exceptions to the original 500-mile limit which were filed by five western roads.

The AAR had sought modification of the second paragraph of Section 132.12 of the Rules for Inspection, Testing and Maintenance of Air Brake Equipment. This section requires the establishment of "designated intermediate inspection points" at terminals no further than 500 miles apart. At these points the following train brake test standards must be met:

- Brake-pipe leakage must not exceed 5 psi per min;
- Brakes must apply on each car with a 20 psi reduction;
- Brake rigging must be in safe condition.

The AAR proposed that a footnote be added reading: "Relief from the requirements of this section will be granted upon an adequate showing by the carrier." The Commission found that relief can be granted only "on the merits of each individual case," that the five roads had not adequately supported their cases, and that all the railroad petitions would be denied.

The footnote finally included with Section 132.12 applies only to the 500-mile limit. It reads: "Relief from the 500-mile inspection requirement of this section will be granted upon an adequate showing by an individual carrier." The Commission explained that the only basis for this relief will be a clear showing that it is "for the sole purpose of achieving safety."

By Commission action on the five individual cases, operating complications and added financial burdens were shown to be no basis for relaxation of the 500-mile limit.

The Santa Fe asked for relaxation of the 500-mile limit to permit operation of freight trains from Argentine (Kansas City) to Amarillo, Tex.—524.2 miles. The Commission findings: "Notwithstanding the petitioner's good accident record and the fact that strict compliance with the 500-mile inspection requirement . . . will adversely affect petitioner economically or financially, these facts are not sufficient grounds to justify a relaxation or modification." An inspection point at Waynoka, Okla., will be necessary.

Great Northern wanted to operate freight trains from Havre, Mont., to Hillyard, Wash.—524.4 miles, and passenger trains from Havre to Spokane, Wash.—529.1 miles. "We are of the opinion," the commissioners stated, "that [an inspection] at Whitefish, Mont. . . . or some other intermediate point, would not greatly inconvenience petitioner. While in doing so, operating conveniences or economic advantages may be affected, the establishment of an additional inspection point . . . would achieve safety."

The Northern Pacific sought to operate passenger trains from Mandan, N. D., to Livingston, Mont.—548 miles—without intermediate inspection. Despite the NP's accident-free record and its large ownership of disc-braked cars, its petition was denied.

Tucson, Ariz., is 502 miles east of Los Angeles on the Southern Pacific. At three intermediate crew-change points, freight trains are tested to insure brake-pipe continuity. This practice, according to the railroad, is more restrictive than Commission rules require and should permit trains to operate to Tucson without a complete intermediate inspection.

"Notwithstanding the fact that the distance for which relief is sought . . . is only two miles and from an operating standpoint it would be more practical and economical to designate Tucson as the first intermediate brake test point east of Los Angeles, nevertheless the [Act] does not permit us to make such designation," the Commission stated.

Also denied was an SP petition to operate freight trains from Carlin, Nev., to Klamath Falls, Ore.—536.7 miles—a territory without intermediate car inspection forces. "The designation of another intermediate inspection point," the Commission reported, "would entail additional expense but expense alone cannot be a basis for granting relief . . ."

The UP had sought a series of exceptions: Council Bluffs, Iowa, to Cheyenne, Wyo.—510 miles; Cheyenne to Salt Lake City—519 miles; Denver to Ogden, Utah—577 miles; Cheyenne to Pocatello, Idaho—551 miles; and Pocatello to Hinkle, Ore.—542 miles.

Again, the Commission indicated that although relief would eliminate train delays and result in operating conveniences, safety would not be achieved and the petition was denied.

Job Standards Can Save Money

As the drive for greater efficiency continues, railroading is becoming more of a science, less of an art. Railroads are finding that they need to know what constitutes optimum performance so they can seek it from all employees. In the search, guess-and-by-gosh judgment by supervisors is giving way to established work standards. Even in the operating department, where the need is greatest and so are the problems, genuine progress is being made. Here's how one road, the B&LE, has tackled the question.

Figuring it roughly, the fully distributed cost of a road crew handling a train with four diesel units comes to about $120 an hour. If the crew isn't doing as much work as possible each hour, something's going expensively wrong.

But for generations, operating men have been faced with a real stumper in trying to see that things go right: How do you recognize a suitable day's work when the conditions under which the work is done rarely occur twice in the same pattern?

It's been the inability of railroads to answer this question satisfactorily which, perhaps more than anything else, has made judgment of work standards in the operating department something of a haphazard, unscientific venture. But lately, several roads have found a measure of success in establishing standards which mean something, are easy to apply, and do the job for which they're intended: They measure how well each crew performs the jobs to which it is assigned.

A committee of the American Association of Railroad Superintendents has reported on an analysis of several such work standard plans. Methods vary, of course, with individual roads and with the job that has been undertaken.

Representative of the work being done is a method of determining train performance used by the Bessemer & Lake Erie.

The B&LE has adopted what is known as an "incident" type of standard. As the Superintendents' report points out, there are several types of standards. All are designed to provide a series of values, normally expressed in units of time, to show the usual way in which a job is expected to be done. In essence, that's what a work standard is, by the report's definition—something which shows the amount of work which should be performed for a stated investment in crew time, given a qualified crew working at a normal, acceptable pace.

Basically, a great number of simple statistics are in reality work standards of sorts. Comparing cars per engine-hour for a current period with a period in the past provides a type of standard, the committee's report says. But this and similar attempts at measurement fall down in an important respect: They indicate only trends. There's little in them which shows whether the comparison indicates good, bad or indifferent performance.

Measurements of volume, too, offer a type of standard often used. Example: Crews or yards are given credit for having earned a given number of minutes for each unit of volume. For instance, if the allowance is 5 minutes per loaded car handled, and a crew handles 100 loads in an 8-hour trick, its performance rating would be 104% (5 times 100 divided by 480).

Method Has a Shortcoming

Setting the values in standards of this type is usually done on the basis of experience. The method results in a standard of considerable use in determining cost performance, the committee says. But again, it has a shortcoming. It doesn't reflect accurately enough the conditions which may have caused an unusual performance.

"It is of little value in picking out individual, exceptional performances since there is no easy way to correlate the performance as indicated with the work as witnessed on the ground by the operating personnel involved," the report says.

The Superintendents' committee regards the so-called "incident" standard as the most valuable, generally speaking. Basically, B&LE's determination of train performance follows this method. Values are earned on the basis of the occurrence of certain specified incidents—the incidents being the individual components of a day's work in getting a train over the road.

Each incident is given a standard time value, one which is easy to check out with actual practice. The sum of these incident time values, measured against the total time consumed, yields a performance value for the operation.

On the B&LE, a typical example might involve a drag crew which made three round trips between Albion, Pa., and Conneaut, Ohio, about 15 miles. Their drag delay report was filled out by the conductor. His report, tailored for a crew assignment of this type, provides all the necessary material for analysis on a train performance report.

During each round trip, the crew completes these incidents:

Initial pickup at Albion; air test; running Albion to Conneaut; setting off at Conneaut; picking up at Conneaut for the return trip; air test; running Conneaut to Albion; and setting off at Albion.

The train performance report relates established time standards (for the incidents expected of Albion-Conneaut turns), to the number of cars handled. Working from the conductor's drag delay report, the proper time values are circled to indicate that these incidents occurred to this particular crew. If an incident occurs more than once, a check mark is added.

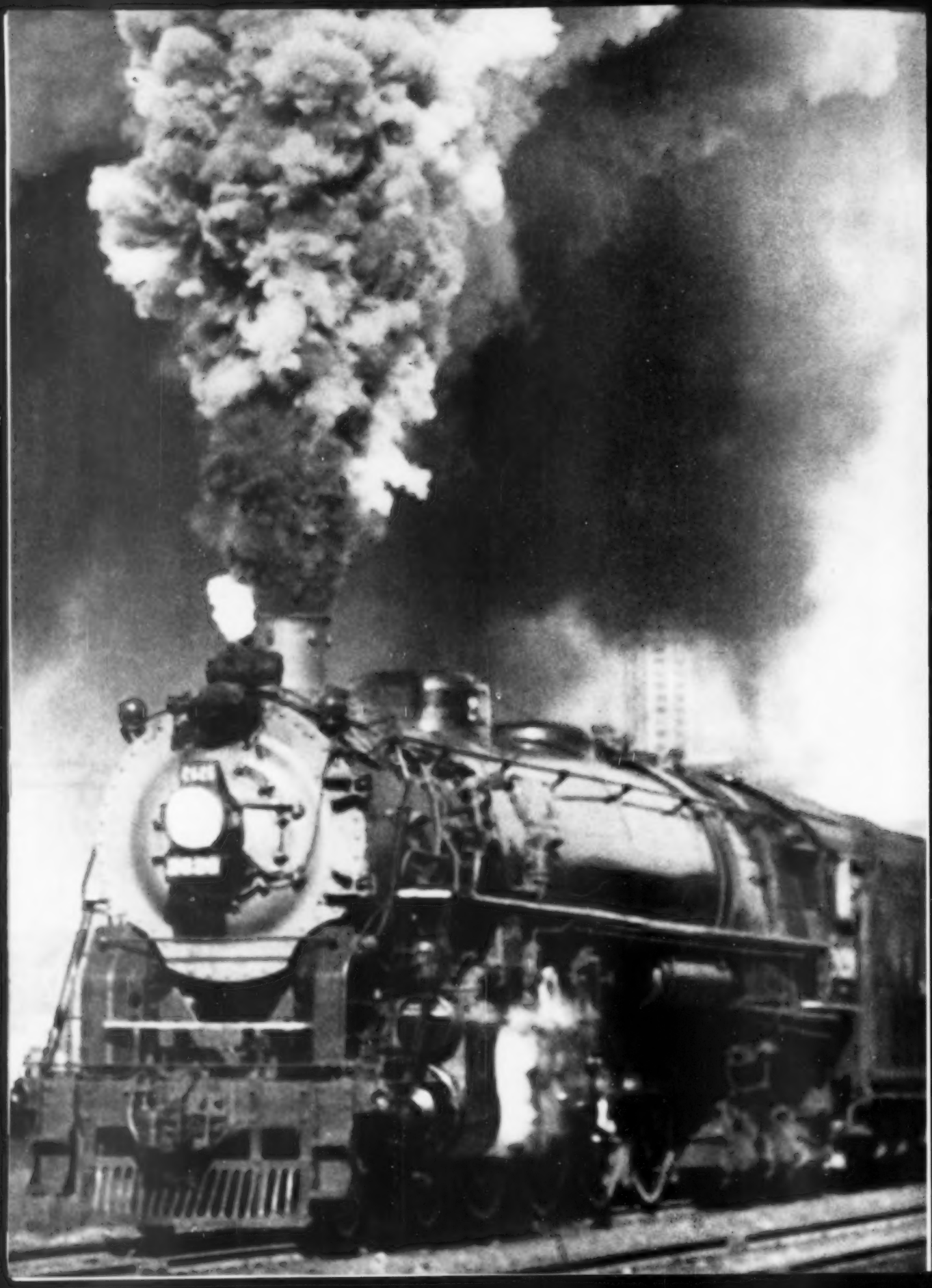
For instance, in this particular example the crew made, say, five air tests, aside from an initial test at Albion (which would be included in some initial delay). The test made before leaving Albion on the third turn with 40 cars earned a value of 4 minutes. The four others, made with between 100 and 125 cars, earned 10 minutes apiece.

In this report, a suitable record is made each time a train sets off or picks up cars on more than one track. For example, a circle and two check marks would indicate that the crew picked up on two tracks at Conneaut on three separate occasions.

With this report of how the crew should have fared on each of its three trips, performance values can be determined for each turn and for the day as a whole on the basis of the conductor's report. This, in turn, can be related to the crew cost involved.

The Superintendents' report points out that performance values are of little use unless they are compiled and

(Continued on page 26)



COLLECTOR'S ITEM

VALUE: $288,000,000

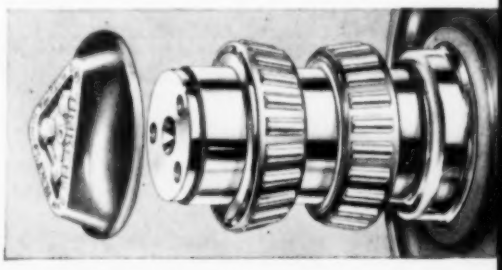
THIS is the "Four Aces". And like all steamers, it commands a special spot in the hearts of railroaders. But this particular locomotive is something extra special. It fired up an idea that can save the railroads at least $288,000,000 a year in operating and maintenance costs.

The "Four Aces" was the first locomotive in America completely equipped with roller bearings . . . Timken® tapered roller bearings. It was built by the American Locomotive Company at Schenectady in 1929. It proved that tapered roller bearings could take the load . . . run at high speeds without hot boxes.

This pioneering step paved the way for "Roller Freight". It's an example of how the Timken Company has worked with the railroad industry over the years.

Now we're reaffirming our partnership with the railroads. We built a special plant that uses revolutionary methods to produce freight car roller bearings—up to 20,000 car sets a year. This unique plant is designed to help the railroads go "Roller Freight" on a planned basis—make it possible to go "Roller Freight" at minimum cost.

Today 84 railroads and other car owners have almost 40,000 cars on Timken bearings. When all freight is "Roller Freight", the railroads will save that $288,000,000 yearly. Why not talk to your railroad friends about this planned conversion? Let your new railroad roller bearing plant help you start your savings now. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO". Makers of Tapered Roller Bearings, Fine Alloy Steels and Removable Rock Bits.



The "Four Aces", 2626, when it was on the Northern Pacific.

BETTER-NESS rolls on

TIMKEN® tapered roller bearings

First in bearings for 60 years

JOB STANDARDS CAN SAVE MONEY (*Continued from page 23*)

acted upon quickly. Ideally, it says, they should provide effective and timely operational controls as well as a source of data for review.

In the B&LE example, the crew tied up at 12:08 p.m. The delay report was transmitted to the relay office at operating headquarters at 12:55 p.m. By 1:30, it could have been on the desk of the performance report clerk. Within a few minutes after that, a photo-reproduced copy could have been in the hands of the operating officer responsible for the crew's performance.

Actually, the handling of these reports doesn't move quite that rapidly. Usually the reports are accumulated each day and checked against the train sheet and train consists next day for inaccuracies. The performance clerk then works through a day's operations for all trains.

Having the information, a railroad can do several things with it, the report says:

- It can pick out poor performers, whether they be crews, yardmasters, or perhaps even entire yards or divisions. The reports offer concrete, specific facts upon which a good case can be made.
- It can simplify immensely the task of cost review and budgeting. Road and yard costs of handling individual shipments can be more readily determined. Therefore, comparing costs with revenues for ratemaking purposes becomes easier.
- The actual efficiency of a part of the organization—or the whole railroad, for that matter—can be more readily compared with standard efficiency indexes, where they exist.

The report warns of the pitfalls of setting up work standards: "It is very easy to develop standards which are either impractical in application or are so complicated that their application consumes more man-hours than can be saved by their use. . . .

"The question of what type of standard to settle on can only be decided in the light of the situation on the particular railroad.

"Generally speaking, the most effective standards are also the most expensive to install and maintain.

"Experience has shown that money spent for a good set of standards can repay manyfold their expense. In these days when the fully distributed cost of a four-unit road crew approximates $120 an hour, any standard which will help save even a few hours of road crew time will certainly justify the expense of installation."

Railroading After Hours with Jim Lyne

SIMPLER LETTERS—E. C. Ziesel of Warren, Ind., thinks railroad men would get a lot of help in writing more effective letters if they'd send 30¢ to the Superintendent of Documents at the Government Printing Office in Washington, and get a copy of a booklet called "Plain Letters." I got a copy which I've so far just glanced at, but it looks pretty good.

Some railroad letters I've seen (far from a majority) are written in gobbledygook language—almost as bad as the stuff you get from the bureaucrats.

FREIGHT TRAIN PASSES—E. E. Brockman of the Santa Maria Valley RR (California) has sent me a photo-copy of a pass "good on freight trains and light engines," issued to him in 1923 (as chief clerk in the traffic department) by the Denver & Salt Lake.

C of Ga's Western Traffic Manager R. M. Martin at Chicago tells me he has such a pass, dating back to 1920, issued by the then C of Ga president, Larry Downs (later president of the Illinois Central). In 1927, he got another of these passes (signed by President Pollard) and "good until cancelled." Cancellation has never happened.

Considering the number of the lines without passenger service today, I'd suppose passes like this would be growing in use.

PASS LAMENT—Speaking of passes, R. S. Moore has sent me from Toronto a copy of a poem—dating back, apparently, to the time of the Hepburn Act (1906), which made free passes illegal (except for employees, union officers and clergymen). This reform measure was a great disappointment to a lot of people—politicians and newspaper people especially.

I can't allow myself to go in for poetry in this corner, but I'll compromise to the extent of a couple of lines of this ballad:

"How dear to my heart are the old railroad passes,
As fond recollection presents them to view
The passes that lifted me over the masses
The trips and the round-trips and the annuals too."

Incidentally, while passes to "outsiders" are strictly illegal interstate, they are not always forbidden intrastate. In New Jersey, state job-holders get them—and have shown their appreciation by taxing railroads at a higher rate than any other state in the union.

'MASS'—A BAD WORD?—Ken Ross, transportation marketing developer for General Electric, doesn't like the term "'mass transportation," and believes readers of this department could suggest a more attractive word. The people who use mass transportation—and whose support is vital to it—don't like to be called "masses."

The right word helps a lot. Ken suggests "group transportation," but he isn't satisfied with the suggestion. I agree with him that there must be a better one. Any ideas?

WHAT 'HOJACK' MEANS—Chief Clerk Thomas M. Gilbert in the Erie's freight traffic departments says "hojack" doesn't mean a train running under trackage rights (this corner in our July 20 issue). Rather, he advises, this term is an old boomer's nickname for the Rome, Watertown & Ogdensburg (now absorbed into the N.Y. Central). The term "hojack" might have been used to designate a RW&O train operating over another line under trackage rights—but the reference would be to the railroad, not to trackage rights operation.

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e., with last three digits omitted)

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1959

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Operating Revenues: Pass.	Operating Revenues: Total (inc. misc.) 1959	Operating Revenues: Total (inc. misc.) 1958	Operating Expenses: Maint. Way and Structures: Total 1959	Maint. Way and Structures: Total 1958	Maint. Way and Structures: Deprec. and Retirements	Maint. Equipment: Total 1959	Maint. Equipment: Total 1958	Maint. Equipment: Deprec. and Retirements	Traffic	Transportation	Total 1959	Total 1958	Operating ratio: 1959	Operating ratio: 1958	Net from railway operation	Railway tax accruals	Net Railway operating income: 1959	Net Railway operating income: 1958
Akron, Canton & Youngstown	May	171	501	...	518	416	67	48	6	81	63	15	43	156	392	336	75.8	80.9	125	70	36	17
	5 mos.	171	2,500	...	2,563	1,965	304	262	28	363	314	74	218	764	1,871	1,726	73.0	87.8	692	386	224	2
Alabama, Tenn. & Northern	May	214	251	...	255	198	50	50	6	11	21	6	4	86	155	153	61.0	77.1	100	16	5	—10
	5 mos.	214	1,461	...	1,511	1,215	249	248	33	50	152	28	22	411	899	899	49.6	73.9	761	220	163	—27
Atchison Topeka & Santa Fe	May	13,864	46,569	3,088	54,324	46,542	7,108	5,526	1,027	9,963	9,297	1,777	1,377	19,353	40,116	35,279	73.9	75.8	14,207	8,339	5,060	4,247
	5 mos.	13,896	222,387	13,640	258,913	223,019	32,228	27,750	3,861	51,850	47,348	11,190	6,847	90,694	193,063	176,381	74.6	79.1	65,850	37,808	24,658	17,600
Atlanta & St. Andrews Bay	May	81	382	...	386	349	45	38	3	31	32	8	7	80	184	171	47.8	48.9	201	92	71	60
	5 mos.	81	1,595	...	1,617	1,776	209	174	18	158	152	39	35	372	885	817	54.7	46.0	732	334	257	335
Atlanta & West Point	May	93	260	19	333	389	40	17	8	52	57	14	18	133	267	275	80.2	89.9	66	17	29	—4
	5 mos.	93	1,211	107	1,585	1,585	209	180	38	254	266	71	90	664	1,329	1,349	83.8	89.6	257	87	49	—52
Western Ry of Alabama	May	133	307	17	361	384	56	45	10	61	52	19	20	141	302	275	83.8	90.5	58	43	17	7
	5 mos.	133	1,454	99	1,752	1,656	249	231	46	296	287	95	102	693	1,425	1,425	82.9	86.0	300	200	91	81
Atlantic Coast Line	May	5,300	11,796	928	13,651	12,258	2,013	1,898	173	2,318	2,332	589	497	5,297	10,798	10,371	79.1	84.6	2,854	875	1,370	723
	5 mos.	5,304	56,359	7,110	68,790	64,407	9,208	9,006	875	11,949	11,759	3,057	2,394	26,497	53,792	52,380	78.2	81.3	14,998	7,000	5,062	3,141
Charleston & West. Carolina	May	343	651	...	860	621	134	117	6	97	81	29	21	200	468	615	70.9	66.8	192	110	27	80
	5 mos.	343	2,869	...	2,928	2,969	656	558	43	476	484	144	106	988	2,232	2,010	76.3	67.7	696	425	242	334
Baltimore & Ohio	May	5,917	34,240	1,236	38,100	32,014	4,273	3,027	489	6,739	5,103	1,127	996	15,333	29,261	24,852	76.8	77.6	8,839	2,127	4,608	3,205
	5 mos.	5,917	150,025	5,779	167,146	154,773	18,101	15,628	2,472	30,200	26,531	5,669	4,884	70,930	134,203	125,160	80.3	80.9	32,943	9,967	13,777	10,568
Staten Island Rap. Tran	May	29	182	84	271	285	49	55	12	39	33	2	2	153	275	279	101.5	98.1	—4	48	—71	—60
	5 mos.	29	951	419	1,407	1,424	279	262	60	200	187	9	11	787	1,445	1,395	102.6	98.0	—37	237	—389	—323
Bangor & Aroostook	May	602	1,145	19	1,208	1,281	272	360	19	198	299	110	32	349	1,039	1,137	86.9	88.7	170	73	135	178
	5 mos.	602	6,887	116	7,221	8,124	1,793	2,044	94	1,476	1,461	576	156	2,008	5,862	6,180	81.2	76.1	1,359	534	968	1,354
Bessemer & Lake Erie	May	203	3,750	...	3,841	1,295	234	231	22	703	466	133	34	594	1,718	1,262	44.7	97.4	2,123	1,394	1,988	162
	5 mos.	203	9,222	...	9,528	4,260	1,145	1,183	117	3,245	2,737	691	198	2,345	7,654	6,733	80.3	158.1	1,875	2,445	1,624	—1,984
Boston & Maine	May	1,570	5,496	556	6,541	6,600	769	826	148	856	899	256	148	2,677	4,862	5,278	74.3	79.8	1,630	469	667	312
	5 mos.	1,570	25,462	3,135	31,935	32,300	4,027	5,096	740	4,413	4,568	1,352	749	14,354	25,543	28,243	80.0	87.4	6,393	2,407	1,389	—1,184
C. P. R. in Maine	May	234	533	29	591	567	157	125	20	78	80	17	9	156	420	387	71.1	68.2	171	35	76	93
	5 mos.	234	4,244	212	4,587	4,070	637	634	101	653	626	87	44	1,073	2,526	2,501	55.1	61.5	2,061	168	1,448	963
Carolina & North Western	May	285	260	...	265	235	41	54	7	30	32	21	5	77	172	176	64.9	74.8	93	19	27	13
	5 mos.	285	1,369	...	1,399	1,318	236	244	34	158	148	105	26	376	892	886	63.8	67.2	506	105	155	170
Central of Georgia	May	1,745	3,509	96	3,790	3,576	581	589	41	693	653	193	179	1,499	3,144	3,098	82.9	86.4	646	250	374	271
	5 mos.	1,756	16,898	615	18,525	17,757	2,871	2,931	216	3,454	3,271	954	876	7,319	15,493	15,314	83.6	86.2	3,032	1,269	1,733	1,435
Central of New Jersey	May	597	3,861	471	4,667	4,337	534	509	96	838	732	177	78	2,143	3,832	3,635	82.1	83.8	835	452	154	71
	5 mos.	597	17,856	2,386	21,830	21,691	2,501	2,688	476	4,100	3,854	822	376	10,808	18,946	18,765	86.8	86.5	2,885	2,280	—390	—308
Central Vermont	May	375	872	40	986	953	221	365	18	111	124	9	22	357	748	902	76.0	94.7	236	50	57	163
	5 mos.	375	3,765	244	4,391	4,331	834	990	88	567	551	47	99	1,786	3,484	3,668	79.3	84.7	987	246	41	—338
Chesapeake & Ohio	May	5,122	30,752	495	32,970	28,604	3,540	2,940	522	5,217	4,678	1,872	881	11,029	22,329	20,375	67.7	71.2	10,641	4,958	6,019	4,912
	5 mos.	5,122	138,978	2,407	148,452	138,227	15,950	15,460	2,497	25,648	24,918	9,360	4,320	53,812	108,030	105,394	72.8	76.2	40,422	18,329	24,455	19,849
Chicago & Eastern Illinois	May	862	2,764	155	3,218	2,836	359	419	29	549	523	165	149	1,188	2,418	2,425	75.1	80.9	801	204	330	11
	5 mos.	862	13,388	741	15,521	14,506	1,805	1,818	148	2,525	2,405	791	725	6,041	11,925	11,744	76.8	81.0	3,596	1,024	1,471	705
Chicago & Illinois Midland	May	121	681	....	696	480	45	55	7	101	112	23	31	170	389	376	56.9	78.4	187	64	126	29
	5 mos.	121	2,885	....	2,959	2,698	196	157	39	499	547	116	156	715	1,776	1,787	60.0	66.2	1,182	651	469	345
Chicago & North Western	May	9,287	16,810	1,434	19,734	17,552	3,366	2,733	399	3,932	2,719	999	537	8,084	15,988	14,489	81.0	82.5	3,746	1,303	1,654	895
	5 mos.	9,287	74,502	7,380	89,453	83,401	14,092	12,475	1,985	15,528	14,255	4,958	2,669	39,395	77,367	72,991	86.5	87.5	12,086	6,317	1,478	—152
Chicago, Burl. & Quincy	May	8,687	17,750	1,545	21,591	19,800	3,641	2,779	408	4,452	3,661	1,051	643	8,882	18,661	16,209	86.4	81.9	2,930	1,404	1,095	1,683
	5 mos.	8,687	91,127	7,307	108,922	98,924	14,208	12,375	2,007	21,979	18,874	5,172	3,275	43,161	87,679	79,832	80.5	80.7	21,244	10,793	7,838	7,986
Chicago Great Western	May	1,469	2,756	8	2,961	2,959	430	472	56	425	332	123	63	963	2,057	2,059	69.6	69.6	923	353	525	385
	5 mos.	1,469	13,130	36	14,134	14,387	1,975	2,224	228	2,117	2,143	662	627	4,692	9,816	9,994	69.4	69.5	4,318	1,560	1,612	1,774
Chic., Milw., St. P. & Pac	May	10,591	17,123	1,093	20,400	19,154	3,735	3,109	400	3,406	3,483	659	572	8,099	17,089	16,187	83.8	84.5	3,311	1,591	954	634
	5 mos.	10,591	82,918	5,173	97,918	92,878	14,937	14,148	2,052	17,624	18,056	3,428	2,751	40,491	81,933	80,456	83.7	86.6	15,985	7,852	4,089	920
Chicago, R. Is. & Pacific	May	7,536	15,639	1,225	18,599	15,764	2,462	1,980	246	3,255	2,850	618	563	7,478	14,739	12,946	79.2	82.1	3,850	1,705	840	924
	5 mos.	7,551	77,982	6,392	92,475	80,385	11,342	9,231	1,315	16,291	14,500	3,114	2,829	36,907	72,344	64,689	78.2	80.5	20,132	8,430	4,568	3,665
Clinchfield	May	293	1,785	3	1,801	1,641	236	248	22	320	322	107	67	456	1,144	1,113	63.5	67.8	657	203	609	409
	5 mos.	293	9,112	4	9,166	8,717	1,126	1,142	109	1,611	1,743	532	330	2,275	5,684	5,635	62.0	64.6	3,483	1,017	3,148	2,847
Colorado & Southern	May	712	1,317	51	1,515	1,310	443	181	19	240	177	80	38	549	1,346	973	88.8	74.2	169	87	58	149
	5 mos.	715	5,923	256	6,887	5,789	1,177	816	148	1,181	985	350	185	2,719	5,639	4,713	81.9	81.4	1,248	692	402	466
Ft. Worth & Denver	May	1,362	1,416	129	1,751	1,643	412	350	30	257	343	47	80	833	1,700	1,653	97.1	100.6	51	Cr. 60	—59	—98
	5 mos.	1,362	8,015	582	9,786	8,348	1,799	1,472	149	1,399	1,437	227	404	4,175	8,411	7,568	86.7	90.6	1,295	249	—42	—71
Colorado & Wyoming	May	39	279	..	430	311	27	20	2	34	28	12	2	143	222	167	51.5	53.6	209	120	84	53
	5 mos.	39	1,218	..	1,965	1,250	108	82	11	201	143	62	9	675	1,072	783	54.5	62.6	894	526	353	153
Delaware & Hudson	May	764	3,875	90	4,115	3,749	418	543	63	741	664	189	115	1,428	2,979	3,099	72.4	82.7	1,136	544	654	174
	5 mos.	764	18,471	616	19,889	19,238	2,023	2,343	297	3,551	3,326	948	529	7,371	14,922	15,167	75.3	78.8	4,886	2,158	2,775	1,604
Delaware, Lack. & Western	May	918	4,884	729	6,254	6,340	554	671	164	939	1,142	347	206	3,043	5,106	5,717	81.6	90.2	1,148	642	372	126
	5 mos.	918	22,914	3,752	30,223	31,174	2,907	3,697	796	5,334	5,360	1,742	986	15,777	26,902	29,165	89.0	93.6	3,321	3,232	—605	2,424
Denver & Rio Grande Western	May	2,128	6,255	193	6,656	5,828	979	842	99	993	931	322	231	2,133	4,643	4,139	69.8	71.0	2,013	1,163	886	842
	5 mos.	2,133	29,308	971	31,321	28,387	3,690	3,252	483	4,830	4,499	1,596	1,187	10,109	21,254	19,642	67.9	69.2	10,067	5,504	4,704	4,324
Detroit & Toledo Shore Line	May	50	598	.....	624	529	56	63	4	87	72	24	21	230	411	380	65.8	71.9	213	83	48	20
	5 mos.	50	3,360	.....	3,581	2,984	318	328	19	447	367	119	107	1,219	2,177	1,989	55.8	66.6	1,406	517	311	173
Detroit, Toledo & Ironton	May	465	1,323	.....	1,911	1,181	263	180	27	465	335	141	57	510	1,392	1,057	72.9	89.5	518	110	383	33
	5 mos.	465	9,581	.....	10,097	6,792	1,361	1,059	145	2,051	1,795	702	285	2,615	6,801	5,806	76.4	85.5	3,296	542	2,462	636
Duluth, Miss. & Iron Range	May	557	7,136	1	8,340	3,928	552	479	70	604	574	192	12	1,787	3,246	2,320	38.9	76.6	5,994	568	4,499	421
	5 mos.	557	10,477	4	12,257	6,381	2,497	2,495	354	3,023	3,220	937	62	4,658	11,491	10,470	93.8	239.0	766	1,152	—492	—6,655
Duluth, South Shore & Atl	May	544	730	2	789	542	124	110	11	103	94	26	34	226	514	455	65.1	84.0	275	40	228	58
	5 mos.	544	2,679	11	2,855	2,476	546	503	51	570	517	130	164	975	2,381	2,334	83.4	94.2	473	173	229	—40

(Continued on next page)

a RAILWAY AGE Service Page

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands; i.e. with last three digits omitted)

MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1959

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Operating Revenues: Pass.	Total (inc. misc.) Revenues 1959	Total (inc. misc.) Revenues 1958	Operating Expenses: Maint. Way and Structures: Total 1959	Maint. Way and Structures: Total 1958	Maint. Way and Structures: Deprec. and Retirements	Maint. Equipment: Total 1959	Maint. Equipment: Total 1958	Maint. Equipment: Deprec. and Retirements	Traffic	Transportation	Total 1959	Total 1958	Operating ratio 1959	Operating ratio 1958	Net from railway operation	Railway tax accruals	Net Railway operating income 1959	Net Railway operating income 1958
Duluth, Winnipeg & Pacific	May	175	512		517	529	105	88	5	50	54	1	8	185	358	332	69.3	62.7	159	43	30	84
	5 mos.	175	2,366	3	2,394	2,583	428	389	25	299	295	6	38	892	1,712	1,655	71.5	64.0	482	197	59	267
Elgin, Joliet & Eastern	May	205	3,673		4,976	3,380	382	200	29	1,075	1,384	125	43	1,866	3,743	3,184	75.2	94.2	1,233	613	280	—152
	5 mos.	205	18,357		24,698	16,573	1,439	1,264	139	4,930	5,917	625	220	9,296	16,727	15,430	67.7	93.1	7,963	3,944	2,216	—745
Erie	May	2,201	12,690	515	14,383	11,992	1,639	1,270	228	2,257	2,014	545	358	6,452	11,483	10,328	80.0	86.1	2,869	1,126	921	—194
	5 mos.	2,201	58,296	2,619	66,194	60,392	6,796	6,545	1,138	10,645	9,722	2,713	1,858	31,390	50,557	52,185	82.4	86.4	11,637	5,614	2,309	—1,604
Florida East Coast	May	572	2,340	287	2,836	3,252	432	456	46	558	599	118	90	1,087	2,308	2,451	81.4	75.4	525	197	114	365
	5 mos.	572	12,233	2,478	16,200	16,366	2,319	2,156	237	3,123	2,910	588	448	6,038	12,862	12,394	79.4	75.7	3,337	1,029	951	1,631
Georgia Railroad	May	321	605	14	725	652	97	85	8	129	112	35	41	319	627	573	86.5	87.8	98	38	79	77
	5 mos.	321	2,882	69	3,398	3,164	497	425	44	626	555	174	204	1,561	3,081	2,832	90.7	89.5	317	188	191	256
Georgia & Florida	May	321	288		295	281	85	85	3	39	36	8	22	85	251	249	84.9	88.5	44	17	—1	—8
	5 mos.	321	1,531		1,566	1,356	389	374	20	205	181	40	115	469	1,279	1,167	81.6	86.1	288	86	53	—1
Grand Trunk Western	May	951	4,546	161	5,138	4,323	633	783	58	996	861	111	105	2,414	4,407	4,289	85.8	99.2	731	376	—219	—859
	5 mos.	951	22,374	973	25,488	23,236	3,290	3,409	287	4,550	4,315	560	481	12,446	22,012	20,900	86.4	89.9	3,476	1,872	—1,316	—2,311
Great Northern	May	8,293	20,128	820	22,863	18,650	3,984	3,470	358	4,648	3,426	870	611	7,863	17,809	15,264	77.9	81.8	5,054	3,059	1,747	1,738
	5 mos.	8,293	86,856	3,353	97,071	86,738	14,403	13,733	1,474	19,399	19,562	4,342	2,839	36,495	78,131	75,888	80.5	87.5	18,940	11,123	6,603	1,552
Green Bay & Western	May	219	389		396	391	56	99	5	53	50	9	28	123	286	315	72.1	80.6	111	60	33	19
	5 mos.	219	1,897		1,941	1,984	267	331	23	239	265	44	141	603	1,384	1,445	71.3	72.8	557	287	144	164
Gulf Mobile & Ohio	May	2,752	6,361	208	7,020	6,406	938	947	75	1,371	1,298	301	297	2,377	5,346	5,231	76.2	81.7	1,674	746	461	252
	5 mos.	2,752	30,890	1,119	34,349	32,634	4,547	4,531	379	6,807	7,070	1,489	1,515	11,497	26,240	26,726	76.4	81.9	8,110	3,535	2,316	1,358
Illinois Central	May	6,439	19,931	1,693	22,913	21,257	3,367	3,081	377	4,267	3,950	876	644	8,799	18,213	17,447	79.5	82.1	4,700	2,665	1,590	1,299
	5 mos.	6,439	91,789	8,714	111,284	105,874	16,498	14,829	2,002	21,377	20,512	4,346	3,170	43,827	90,714	87,156	81.5	82.3	20,570	10,421	6,691	6,647
Illinois Terminal	May	334	822		917	968	114	117	3	208	154	31	46	372	792	751	86.3	77.6	126	30	—18	65
	5 mos.	334	3,906		4,351	4,563	501	535	15	940	704	153	244	1,794	3,758	3,560	86.4	78.0	593	122	—49	298
Kansas City Southern	May	891	3,550	76	4,001	3,364	346	262	48	522	486	107	97	1,197	2,299	2,092	57.5	62.2	1,702	720	699	534
	5 mos.	891	17,023	318	19,149	18,192	1,484	1,422	238	2,480	2,500	531	490	5,815	10,910	10,743	57.0	59.0	8,239	3,435	3,435	3,158
Kansas, Oklahoma & Gulf	May	327	390		391	359	64	72	7	38	29	12	34	93	258	251	65.9	69.8	133	60	36	20
	5 mos.	327	2,455		2,462	2,227	289	335	39	198	136	59	176	483	1,268	1,228	51.5	55.1	1,194	508	437	368
Lake Superior & Ishpeming	May	160	714		888	813	94	60	12	70	59	30	2	176	360	217	40.6	69.3	527	49	504	66
	5 mos.	160	1,207		1,464	730	304	266	56	319	372	141	10	445	1,173	1,060	80.1	145.1	291	214	156	—471
Lehigh & Hudson River	May	96	294		294	271	33	34	2	26	35	8	15	112	201	212	68.5	78.0	93	40	16	—7
	5 mos.	96	1,367		1,368	1,343	154	168	12	150	193	42	84	547	1,017	1,073	74.3	79.9	351	141	38	—25
Lehigh & New England	May	177	588		594	642	73	63	7	150	131	52	20	221	340	486	91.0	75.8	54	38	185	217
	5 mos.	177	2,369		2,390	2,564	305	275	34	757	666	255	99	1,099	2,416	2,323	101.1	98.6	—26	158	450	508
Lehigh Valley	May	1,129	4,544	120	4,933	4,787	499	513	96	744	853	155	141	2,473	4,078	4,219	82.7	84.1	855	448	223	161
	5 mos.	1,129	21,346	880	23,787	23,271	2,868	3,419	485	4,367	4,161	1,003	706	12,555	21,668	22,182	91.1	95.3	2,119	2,221	—1,110	—2,645
Long Island	May	344	1,148	4,544	5,875	5,691	817	734	97	1,111	1,054	169	48	2,950	5,136	4,867	87.4	85.5	739	368	164	274
	5 mos.	344	5,184	21,679	27,811	27,158	3,946	4,122	494	5,416	5,617	843	210	14,572	25,160	25,136	90.5	92.6	2,652	1,810	—149	—754
Louisiana & Arkansas	May	746	2,932	41	3,777	3,965	228	216	23	315	312	99	82	687	1,390	1,368	63.9	69.6	787	383	290	180
	5 mos.	746	9,767	199	10,481	10,230	944	1,005	102	1,451	1,522	492	391	3,314	6,493	6,687	62.9	65.4	3,987	2,036	1,449	1,246
Louisville & Nashville	May	5,697	18,498	645	20,618	17,574	2,758	2,741	301	3,937	3,770	1,113	497	7,650	15,765	15,512	76.5	88.3	4,853	3,334	2,186	997
	5 mos.	5,697	86,906	3,229	97,541	90,757	13,256	13,790	1,513	20,364	19,972	5,543	2,464	37,603	78,279	79,179	80.3	87.2	19,262	13,470	7,991	5,858
Maine Central	May	944	1,941	38	2,094	2,089	376	392	27	380	400	84	29	749	1,663	1,723	79.4	82.5	431	230	151	129
	5 mos.	944	9,983	266	10,838	11,343	1,859	1,915	137	1,917	2,009	420	150	4,132	8,686	8,878	80.2	78.3	2,152	1,037	757	852
Minneapolis & St. Louis	May	1,391	1,832		1,887	1,994	334	394	27	381	303	103	122	632	1,607	1,459	85.1	76.7	281	136	134	169
	5 mos.	1,391	8,654	3	8,954	9,029	1,343	1,352	155	1,628	1,475	505	602	3,278	7,598	7,154	84.9	79.2	1,356	796	551	630
Minn., Northfield & Southern	May	77	392		412	364	21	25	2	42	36	13	31	105	234	215	56.8	59.1	178	100	65	59
	5 mos.	77	1,861		1,947	1,821	102	104	12	208	203	64	154	500	1,134	1,052	58.2	57.8	814	452	305	304
Minn., St. P. & S. Ste. Marie	May	3,222	3,414	51	3,661	3,180	741	617	66	678	575	141	109	1,407	3,139	2,818	85.7	88.6	522	286	155	128
	5 mos.	3,222	15,240	188	16,317	16,092	3,016	3,037	269	3,505	3,516	703	544	7,025	15,102	14,585	92.6	92.5	1,215	1,258	—333	—244
Missouri-Illinois	May	172	542		546	573	49	97	4	97	94	37	15	129	303	330	55.6	88.5	242	141	153	54
	5 mos.	172	2,213		2,236	1,931	225	322	25	455	450	186	70	592	1,409	1,436	63.0	74.4	827	595	474	322
M.-K.-T. Lines	May	2,918	4,700	74	5,170	4,920	645	562	87	954	785	260	181	1,825	3,840	3,594	74.3	73.0	1,330	340	388	366
	5 mos.	2,918	22,660	331	25,063	24,437	2,850	2,714	440	5,027	4,382	1,302	929	8,669	18,589	18,575	74.2	76.0	6,475	1,688	1,891	1,679
Missouri Pacific	May	9,440	22,867	862	26,077	22,899	3,590	3,927	340	4,469	4,115	1,077	668	10,175	19,905	18,971	76.3	82.8	6,172	1,900	2,657	1,794
	5 mos.	9,498	109,036	4,054	124,913	117,114	16,383	17,435	1,614	21,699	20,822	5,410	3,396	48,369	94,799	92,046	75.9	78.6	30,114	9,590	13,754	12,300
Monon	May	541	1,616	32	1,753	1,588	266	207	29	322	269	76	100	665	1,455	1,353	83.0	85.2	298	115	121	100
	5 mos.	541	7,601	211	8,444	8,254	1,123	1,040	109	1,545	1,415	382	515	3,515	7,207	6,863	85.4	83.2	1,227	422	447	447
Monongahela	May	177	411		413	421	69	67	13	60	56	11	1	142	292	289	70.6	68.7	121	11	58	—8
	5 mos.	177	2,869		2,079	1,943	323	334	63	283	292	55	5	936	1,657	1,494	79.7	76.9	422	78	66	—275
New York Central	May	10,439	46,744	5,295	60,552	51,351	6,430	5,634	1,081	10,700	9,500	2,476	1,096	27,932	49,136	46,191	81.1	94.0	11,417	5,498	4,125	—2,001
	5 mos.	10,443	223,725	28,222	293,343	256,829	31,292	30,446	5,405	53,500	47,500	11,785	5,408	139,308	245,206	233,168	83.6	90.8	48,137	27,456	12,632	—14,179
Pitts. & Lake Erie	May	221	3,550	31	3,746	2,423	413	486	69	1,011	879	344	70	1,231	2,932	2,727	78.3	112.5	814	724	926	194
	5 mos.	221	15,041	173	16,140	11,889	1,829	2,121	291	4,718	4,620	1,620	334	5,917	13,856	13,626	85.9	114.6	2,284	3,057	4,427	1,901
New York, Chic. & St. L.	May	2,170	13,472	123	14,128	11,021	1,502	1,218	157	2,312	1,955	492	356	4,923	9,584	8,401	67.8	76.2	4,544	2,243	1,859	980
	5 mos.	2,174	62,242	660	65,148	55,683	6,824	6,663	800	10,496	9,955	2,382	1,819	24,038	45,610	43,407	70.0	78.0	19,538	9,577	7,969	4,522
New York, N. H. & Hart	May	1,762	7,174	3,671	12,631	12,070	1,555	1,387	292	1,737	1,956	464	258	5,998	10,501	10,319	83.1	85.5	2,130	973	—287	—541
	5 mos.	1,762	33,541	19,457	61,633	60,014	6,941	7,356	1,408	9,102	9,793	2,318	1,153	29,994	51,963	52,771	84.3	87.9	9,670	4,738	—2,143	—3,779
New York Connecting	May	21	341		367	389	54	118	25	17	14			89	163	243	44.5	62.5	204	87	89	13
	5 mos.	21	1,631		1,758	1,875	282	509	127	63	89			444	807	1,067	45.9	56.9	951	447	394	263
New York, Susq. & Western	May	106	299	17	330	329	38	41	6	54	55	11	9	176	311	307	94.0	93.1	20	31	—56	—49
	5 mos.	106	1,548	93	1,711	1,785	198	193	29	277	289	53	44	876	1,541	1,573	90.1	88.1	170	154	—170	—144

REVENUES AND EXPENSES OF RAILWAYS

(Dollar figures are stated in thousands: i.e., with last three digits omitted)

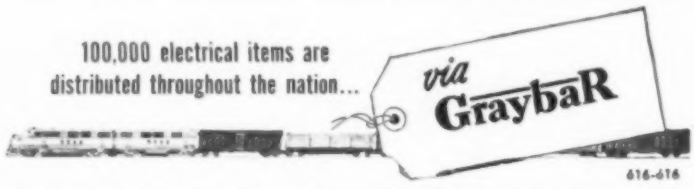
MONTH OF MAY AND FIVE MONTHS OF CALENDAR YEAR 1959

Name of Road		Average mileage operated during period	Operating Revenues: Freight	Pass.	Total (inc. misc.) 1959	Total (inc. misc.) 1958	Operating Expenses: Maint. Way and Structures: Total 1959	Total 1958	Deprec. and Retirements	Maint. Equipment: Total 1959	Total 1958	Deprec. and Retirements	Traffic	Transportation	Total 1959	Total 1958	Operating ratio 1959	Operating ratio 1958	Net from railway operation	Railway tax accruals	Net Railway operating income 1959	Net Railway operating income 1958
Norfolk & Western	May	2,138	17,595	204	18,643	16,455	1,970	2,171	344	3,089	3,034	1,110	352	4,802	10,959	11,014	58.8	66.9	7,684	4,436	4,847	2,883
	5 mos.	2,138	82,593	966	87,785	80,893	9,395	11,415	1,766	15,043	18,245	5,432	1,729	24,269	58,419	61,519	62.0	76.0	33,366	18,914	20,660	11,094
Norfolk Southern	May	592	821		831	693	208	185	18	133	124	32		270	726	652	87.3	94.1	105	49	27	—40
	5 mos.	592	3,877		3,941	3,560	949	866	60	635	622	160	257	1,326	3,478	3,220	88.3	90.5	463	250	68	—45
Northern Pacific	May	6,828	14,175	431	15,734	13,679	2,619	2,146	506	2,819	2,755	770	432	6,023	12,798	11,841	81.3	86.6	2,936	2,212	1,918	782
	5 mos.	6,828	64,459	1,917	71,541	65,350	10,540	8,987	1,822	14,045	14,276	3,779	2,083	29,521	60,804	57,905	85.0	88.6	10,737	7,821	4,090	2,223
Northwestern Pacific	May	328	1,315		1,327	1,124	205	221	22	87	76	3	11	349	678	676	51.1	60.1	649	262	173	98
	5 mos.	328	5,796	2	5,847	4,429	1,091	1,408	108	419	392	12	42	1,653	3,329	3,527	56.9	79.6	2,518	970	592	—90
Pacific Electric	May	368	1,163		1,293	1,085	212	196	24	51	61	4	23	636	1,011	925	78.2	91.8	282	114	4	—134
	5 mos.	359	5,210		5,977	5,090	953	881	118	273	308	18	103	2,737	4,570	4,393	76.5	86.3	1,407	602	90	—489
Pennsylvania	May	9,920	65,334	8,504	82,990	67,040	7,877	8,110	1,454	15,796	14,230	2,913	1,244	36,235	65,432	60,634	78.8	90.4	17,558	5,630	6,729	2,471
	5 mos.	9,920	292,869	44,158	379,509	331,440	37,454	38,776	7,295	76,585	69,495	14,882	6,160	173,514	314,875	302,592	83.0	91.3	64,634	26,918	13,439	—13,431
Penn.-Reading S. S. Lines	May	353	647	71	735	578	470	257	321	133	123	26	9	481	1,155	890	157.1	153.8	—420	68	—661	—536
	5 mos.	353	2,786	315	3,181	3,078	1,217	1,050	431	656	625	129	42	2,383	4,569	4,313	143.7	140.1	—1,368	540	—2,364	—2,315
Piedmont & Northern	May	126	487		496	390	38	47	5	39	24	10	31	90	230	212	46.5	54.2	266	133	80	47
	5 mos.	126	2,424		2,473	2,122	201	223	23	174	138	47	155	447	1,147	1,085	46.4	51.1	1,326	675	402	291
Pittsburgh & West Virginia	May	132	923		932	554	147	142	25	156	144	45	79	251	697	631	74.8	114.0	235	118	115	11
	5 mos.	132	3,909		3,955	3,457	719	646	124	798	743	227	392	1,183	3,401	3,137	86.0	90.8	553	276	361	277
Reading	May	4,576	9,166	207	10,047	9,062	1,501	1,328	170	1,533	1,521	608	348	4,007	7,966	7,518	79.3	83.0	2,081	835	1,043	692
	5 mos.	4,576	44,628	1,032	49,105	43,986	7,805	5,827	935	8,295	7,897	3,043	1,780	19,167	39,951	37,380	81.4	85.0	9,154	3,590	4,772	3,291
St. Louis-S. F. & Texas	May	143	308	3	331	388	28	48	4	31	25	1	22	165	258	249	77.9	64.4	73	14	—1	27
	5 mos.	143	2,036	14	2,163	1,825	125	234	20	142	134	6	116	769	1,212	1,304	56.0	71.5	952	361	272	82
St. Louis Southwest. Lines	May	1,556	5,790	6	5,896	4,651	589	680	82	649	674	193	186	1,844	3,633	3,374	61.6	72.5	2,263	1,025	899	618
	5 mos.	1,556	27,008	24	27,455	24,285	2,959	3,421	373	3,267	3,434	945	946	9,066	17,324	16,879	63.1	69.5	10,130	4,498	4,223	3,363
Savannah & Atlanta	May	144	353		366	360	61	80	2	67	56	19	17	112	269	270	73.4	75.0	97	46	45	54
	5 mos.	144	1,593		1,668	1,588	279	310	9	320	289	96	86	544	1,291	1,246	77.4	78.1	377	159	193	220
Seaboard Air Line	May	4,148	11,854	978	13,795	13,204	1,756	1,937	207	2,512	2,629	705	452	4,930	10,344	10,575	75.0	80.1	3,450	1,452	1,709	1,538
	5 mos.	4,147	58,440	5,518	69,330	65,740	8,678	9,039	1,041	12,609	12,995	3,519	2,275	24,443	51,564	51,744	74.4	78.7	17,766	8,019	8,540	7,708
Southern Ry	May	6,269	19,541	795	22,007	19,580	2,880	3,091	313	3,744	3,494	956	494	6,814	15,125	14,505	68.7	74.4	6,883	3,059	3,206	2,915
	5 mos.	6,269	99,042	4,026	111,509	103,346	15,931	14,658	1,568	19,053	17,692	4,751	2,422	35,389	78,579	75,115	70.5	72.7	32,929	14,288	15,166	15,061
Alabama Great Southern	May	328	1,293	33	1,467	1,056	287	244	39	291	293	82	40	501	1,222	1,072	83.3	101.5	244	106	162	103
	5 mos.	328	6,275	184	7,167	6,371	1,352	1,210	178	1,568	1,463	410	201	2,465	6,094	5,727	85.0	89.9	1,073	481	348	106
Cinn., N. O. & Tex. Pac	May	337	3,369	56	3,625	2,728	595	629	85	667	671	223	81	986	2,438	2,361	67.3	86.5	1,187	575	761	312
	5 mos.	337	15,979	336	17,327	15,177	2,986	2,966	373	3,622	3,289	1,110	404	4,456	12,405	11,824	71.6	77.9	4,922	2,216	3,271	2,501
Georgia Southern & Florida	May	397	672	24	775	800	118	212	12	78	82	11	23	272	576	576	67.5	72.0	228	29	17	97
	5 mos.	397	3,667	147	4,222	3,856	696	835	54	402	392	53	113	1,330	2,832	2,982	67.1	77.3	1,390	225	298	207
New Orleans & Northeastern	May	203	926	24	1,024	927	194	212	25	205	168	85	27	263	762	705	74.4	76.1	262	200	132	189
	5 mos.	203	4,241	133	4,742	4,702	1,053	915	113	1,014	794	417	133	1,308	3,874	3,387	81.7	72.0	867	693	448	512
Southern Pacific	May	8,068	43,375	1,921	48,412	41,796	5,471	5,239	481	10,140	9,348	2,488	839	18,118	36,562	34,097	75.5	81.6	11,850	5,801	4,540	3,882
	5 mos.	8,070	202,039	9,844	224,095	196,230	25,792	24,998	2,415	47,835	44,424	12,223	4,066	84,376	172,512	162,281	77.7	82.7	51,563	26,215	22,543	17,914
Texas & New Orleans	May	4,162	11,413	268	12,277	11,076	1,950	1,924	160	1,652	1,606	198	261	4,403	8,875	8,660	72.3	78.2	3,402	1,401	803	498
	5 mos.	4,165	54,086	1,314	58,402	55,198	9,826	9,187	1,149	8,191	7,803	968	1,285	21,135	43,456	42,112	74.4	76.3	14,946	6,153	3,418	2,089
Spokane International	May	150	285		294	337	44	68	3	23	36	9	5	79	162	207	55.0	61.3	132	63	34	40
	5 mos.	150	1,496		1,538	1,754	231	318	16	146	168	58	26	370	826	1,026	53.7	58.5	712	349	247	299
Spokane, Portland & Seattle	May	936	2,942	70	2,751	2,485	446	485	59	447	442	129	36	1,041	2,090	2,008	75.8	80.8	661	344	332	281
	5 mos.	936	12,516	314	13,712	12,236	2,150	2,182	310	2,332	2,273	641	174	4,984	10,230	9,961	74.6	81.4	3,482	1,362	1,768	989
Tennessee Central	May	284	335		348	328	47	35	6	51	45	22	16	123	261	239	75.0	72.8	87	22	26	26
	5 mos.	284	1,675		1,740	1,639	208	220	26	265	249	108	90	607	1,292	1,263	74.3	77.0	448	114	136	56
Texas & Pacific	May	1,831	5,374	298	6,279	5,658	939	869	102	1,047	1,052	271	207	2,642	5,207	4,849	82.9	85.7	1,072	457	339	119
	5 mos.	1,831	27,448	1,446	31,812	30,309	4,064	4,078	509	5,286	5,343	1,548	1,026	12,850	25,131	24,127	79.0	79.6	6,681	2,573	1,845	1,361
Texas Mexican	May	161	307		329	312	60	59	6	33	42	11	12	90	221	216	67.0	69.3	109	48	25	23
	5 mos.	161	1,428		1,566	1,580	293	284	29	167	176	57	62	423	1,062	1,018	67.8	64.4	504	209	110	150
Toledo, Peoria & Western	May	239	665		688	643	79	77	7	56	50	13	52	177	407	379	59.1	59.0	281	118	87	82
	5 mos.	239	3,074		3,164	3,098	370	369	34	258	291	63	256	846	1,949	1,905	61.6	61.5	1,214	513	366	349
Union Pacific	May	9,743	38,655	2,118	43,857	39,111	5,315	6,413	562	8,229	7,779	2,195	1,344	15,462	32,557	31,187	74.2	79.7	11,299	6,236	3,283	2,286
	5 mos.	9,751	186,774	9,215	210,540	187,971	26,124	25,915	2,883	40,777	36,568	10,852	6,497	72,681	157,191	145,636	74.7	77.5	53,349	30,003	14,981	11,384
Virginian	May	608	4,092		4,231	4,241	569	445	85	779	737	285	61	810	2,346	2,154	55.5	50.8	1,885	1,030	1,224	1,175
	5 mos.	608	18,980		19,725	20,871	2,664	2,362	429	3,720	3,620	1,416	311	4,054	11,486	11,179	57.8	53.6	8,319	4,259	5,360	5,385
Wabash	May	2,392	9,308	377	10,645	9,103	1,366	1,142	135	1,574	1,501	447	363	4,757	8,496	7,699	79.8	83.5	2,149	629	685	307
	5 mos.	2,392	43,421	1,930	50,204	45,013	6,074	5,242	634	7,348	7,169	2,239	1,805	23,254	40,691	37,250	81.1	82.8	9,513	3,100	2,593	1,446
Ann Arbor	May	294	773		778	713	94	87	7	157	170	45	36	380	691	671	88.7	94.1	88	57	5	—27
	5 mos.	294	3,578		3,612	3,529	421	368	33	790	798	199	176	1,799	3,380	3,210	91.4	91.0	312	277	48	—26
Western Maryland	May	844	4,446		4,563	3,597	590	520	59	846	768	283	129	1,354	3,129	2,841	68.6	79.0	1,434	821	1,049	692
	5 mos.	844	20,839		21,475	18,567	2,890	2,638	248	4,170	3,877	1,415	636	6,747	15,544	14,562	72.4	78.4	5,931	3,301	4,450	3,513
Western Pacific	May	1,190	4,335	182	4,655	4,103	567	599	59	668	783	217	227	1,634	3,405	3,403	73.2	82.9	1,250	565	567	369
	5 mos.	1,190	21,085	754	22,398	19,778	2,487	2,977	411	3,413	3,422	1,082	1,191	7,760	16,338	16,285	72.9	82.3	6,060	2,739	2,994	1,817
Wisconsin Central	May	1,031	2,878	17	3,066	2,706	400	354	42	488	411	109	102	1,217	2,351	2,169	76.7	80.2	716	186	328	177
	5 mos.	1,031	12,707	70	13,506	12,694	1,683	1,730	216	2,359	2,356	541	492	5,916	11,184	10,984	82.8	86.5	2,322	888	543	—84

a RAILWAY AGE Service Page

LEIE
FEBRUARY 20, 1885
NEW TELEGRAPH EMPLOYS ELECTRICAL NUISANCE
NEW YORK, Feb. 20, 1885 — The phenomenon called *induction*, which has been, and indeed is now, a great annoyance in the working of telegraph and telephone lines, is being put to practical use by an imaginative device called the Phelps Induction Telegraph. An instance will, perhaps, better illustrate the nature of this phenomenon.
A gentleman attempting to use his private telephone one morning was astonished to hear the word "Hello, Chicago", and a long subsequent conversation carried on between Chicago and Jersey City. This was possible, not because his instrument was in any way connected with the primary circuit, but simply through an induced current which was set up in another telephone wire which chanced to be about 7 ft. away.
Thus, the Phelps device,

From the above "imaginative device" to the modern miracle of closed-circuit television, American railroads are quick to adopt proven innovations for more efficient operation. And from its infancy, Graybar has always kept its stock and services in tune with the newest developments in railroad communications. Wire and cables . . . carrier telephone and telegraph equipment . . . closed-circuit television, . . . sound systems of all types, each of the thousands of items needed by modern railroads can be supplied through more than 130 conveniently located Graybar offices and warehouses. And you can rely on the same experienced Graybar service in the fields of lighting, ventilation, power apparatus, control equipment and tools. Check your Railroad Pocket list for the address of your nearby Graybar representative. Call him whenever you need assistance.



616-616

GRAYBAR ELECTRIC COMPANY, 420 LEXINGTON AVENUE, NEW YORK 17, N. Y.
OFFICES AND WAREHOUSES IN OVER 130 PRINCIPAL CITIES

New System Developed for Freight Car Identification

Another freight car identification system has been developed that consists of a plastic plate mounted on the side of each car that makes contact with a wayside pickup head detecting the pattern of steel balls in the plate.

Sharpe Instruments Ltd., Toronto, Canada, developer of the system, claims that the equipment operates for train speeds up to 30 mph, and is effective even when the plate is coated with 1/16 in. of mud and ice. In volume production, the car plate and mounting hardware would sell for about $1 each, and the pickup unit and guide for about $100. Auxiliary equipment to record the car identifications would be custom made, but the manufacturer estimates the cost should be considerably less than $5,000 per system.

The plastic plate mounted on the car is provided with eight rows of holes, nine holes per row. Small steel balls are pressed into preselected holes to form a coded pattern of eight digits. Thus the car is identified by the presence or absence of a ball in each hole. The plate is flat and about 6-by-3-by-1/8 in. It is mounted to the car body by springs which allow for the lateral sway of the moving car. As the car passes a check point or yard entrance, a flared U-channel guides the plate into correct alinement with the pickup head. The latter unit includes eight coils—one per digit. Impulses from these may be stored on a ferrite memory core and used to operate a punch card machine or other device.

One advantage of the system, according to Sharpe Instruments, is that new identity plates can be prepared by the railroad whenever they are required. To do this, an operator uses a pressing machine and a supply of punched plates and steel balls. The machine also prints the identifying digit above each row of holes. This reduces errors and permits rapid visual identification. Railroad officers who cooperated in testing the system expressed considerable interest in the design.

Current Publications

BOOKS

THE MAINE TWO-FOOTERS, by Linwood W. Moody. 213 pages, photographs, maps. Howell-North, Berkeley, Cal. $6.

The story of the two-foot gage railroads of Maine told by a man who grew up with them.

GREAT TRAIN ROBBERIES OF THE WEST, by Eugene B. Block. 317 pages. Coward-McCann, Inc., 210 Madison ave., New York 16. $5.

A collection of 20 stories.

MARKET OUTLOOK *at a glance*

Carloadings Drop 8.3% Below Previous Week's

Loadings of revenue freight in the week ended July 25 totaled 536,430 cars, the Association of American Railroads announced on July 30. This was a decrease of 48,640 cars, or 8.3%, compared with the previous week; a decrease of 71,635 cars, or 11.8%, compared with the corresponding week last year; and a decrease of 199,977 cars, or 27.2%, compared with the equivalent 1957 week.

Loadings of revenue freight for the week ended July 18 totaled 585,070 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, July 18

District	1959	1958	1957
Eastern	87,584	82,238	110,676
Allegheny	94,863	90,661	144,177
Pocahontas	47,102	47,367	67,238
Southern	105,579	104,584	116,914
Northwestern	88,700	94,849	124,086
Central Western	110,869	113,792	123,979
Southwestern	50,373	48,753	56,289
Total Western Districts	249,942	257,394	304,354
Total All Roads	585,070	582,244	743,359
Commodities:			
Grain and grain products	60,240	62,474	68,192
Livestock	3,871	3,985	5,441
Coal	94,298	101,171	136,817
Coke	5,958	5,218	10,561
Forest Products	39,909	34,999	42,202
Ore	44,474	50,107	92,615
Merchandise l.c.l.	38,024	42,331	52,021
Miscellaneous	298,296	281,959	335,510
July 18	585,070	582,244	743,359
July 11	554,426	491,566	692,599
July 4	573,325	460,345	535,334
June 27	697,633	627,185	732,733
June 20	723,738	628,010	746,764
Cumulative total, 29 weeks	17,866,333	15,838,271	19,811,688

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended July 18 totaled 7,590 cars, compared with 5,002 for the corresponding 1958 week. Loadings for 1959 up to July 18 totaled 223,910 cars, compared with 138,669 for the corresponding period of 1958.

IN CANADA.—Carloadings for the seven-day period ended July 14 totaled 81,758 cars, compared with 71,945 cars for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada:		
July 14, 1959	81,758	25,732
July 14, 1958	76,208	23,356
Cumulative Totals:		
July 14, 1959	1,977,334	770,310
July 14, 1958	1,956,448	776,901

New Equipment

FREIGHT-TRAIN CARS

► *Chicago & North Western.*—Ordered 150 all-steel, bay-window cabooses from Thrall Car at a cost of approximately $2,070,000. Delivery will begin in October and will continue at a rate of 10 cars per month.

LOCOMOTIVES

► *502 New Units Installed in First Six Months.*—Class I railroads installed 502 new locomotive units (498 diesel-electric; four gas turbine-electric) in the first half of 1959, according to the AAR. In the corresponding period of 1958, they installed 311 units (all diesel-electric). New locomotive units on order July 1 totaled 413, of which 391 were diesel-electric and 22 gas turbine-electric. On July 1, 1958, Class I railroads had 134 new locomotive units on order, of which 104 were diesel-electric and 30 were gas turbine-electric.

Purchases & Inventories

► *Four Months' Purchases Up 15.5%.*—Purchases by domestic railroads of fuel, material and supplies in this year's first four months were $68,910,000, or 15.5%, higher than in the comparable 1958 period. Purchase and inventory estimates in following tables were prepared by Railway Age.

PURCHASES *

	April 1959	Four Months 1959	Four Months 1958
	(000)	(000)	(000)
Rail	$ 10,679	$ 34,116	$ 17,740
Crossties	3,597	16,222	15,010
Other Material	94,571	328,832	280,062
Fuel	32,164	135,331	132,779
Total	$141,011	$514,501	$445,591

* Subject to revision.

INVENTORIES * †

	April 1, 1959	April 1, 1958
	(000)	(000)
Rail	$ 61,694	$ 62,027
Crossties	85,943	101,418
Other Material	407,574	489,476
Scrap	23,979	22,164
Fuel	24,321	25,258
Total	$603,511	$700,343

* Subject to revision.
† All total inventory figures taken from ICC statement M-125 for month indicated.

New Facilities

► *New Haven.*—Plans to install CTC between Danbury, Conn., and Poughkeepsie, N.Y., 75 miles. The project is estimated to cost more than $920,000, but a large share of the cost will be recovered through the sale of scrap rail, as one track of the now double-track line is to be removed. This is part of the Danbury, Conn.-Poughkeepsie-Maybrook freight line, of which the Poughkeepsie-Maybrook section now has CTC. When completed, the entire 98 miles, Danbury to Maybrook, will be under CTC operation.

New Subway Cars Pass Straphanging Test

The first of 110 new subway cars for New York City's IRT line passes a straphanging test performed by New York City Transit Authority Chairman Charles L. Patterson, center, and E. Vincent Curtayne, Transit Authority member. Seated on one of the new molded plastic seats is H. H. Rogge, president of American Car & Foundry Division of ACF Industries. The men inspected two sample cars at ACF's Berwick, Pa., plant. Initial shipment of the $11,726,000 car order was scheduled to arrive in New York early in August.

Two Big Rail Systems Proposed

John W. Barriger, president of the Pittsburgh & Lake Erie, has suggested the creation of "two completely competitive transcontinental [rail] systems."

In his opinion, this is the "only form of consolidation that will now permanently resolve all of the manifold questions that affect the operation of every railroad and insure the permanent survival of the private ownership and operation of the American railways."

Mr. Barriger, a student of consolidation for many years, made the suggestion at Stanford University July 17.

The two transcontinental systems he proposes "would follow the Canadian National-Canadian Pacific plan of coast to coast extent of operation. They would be designed to be as well balanced and as competitively equal as it is possible to make them without dismemberment of any major companies to achieve the objective."

"Initially," Mr. Barriger went on, "two systems should be created in the East, built around the New York Central, Baltimore & Ohio and Chesapeake & Ohio, and the other around the Pennsylvania and its affiliates. The New England lines should be merged into a single non-competitive group owned equally by the other two systems.

"In the West, there should be two systems essentially composed as follows:

"I. Southern Pacific-Cotton Belt; Union Pacific; Chicago & North Western; Milwaukee; Rock Island; Kansas City Southern; Missouri-Kansas-Texas.

"II. Great Northern-Northern Pacific; Missouri Pacific-Texas & Pacific; Burlington Lines; Spokane, Portland & Seattle; Santa Fe; Denver & Rio Grande Western; Western Pacific; St. Louis-San Francisco.

"Similarly in the South there would be two systems:

"I. Illinois Central, Southern, Seaboard Air Line, Central of Georgia.

"II. Atlantic Coast Line-Louisville & Nashville; Florida East Coast; Gulf, Mobile & Ohio.

"Following these two-party competitive regional amalgamations, two transcontinental systems would be formed, through two top companies, which would include one of the systems in each region."

Mr. Barriger pointed out that "since a nationally unified transportation service must be performed over a vast network of trackage whose ownership and management is highly diffused, the individual railway companies have coordinated their operations and pricing in the ways necessary to do so."

He added: "It is a tribute to the ability of the railways to work together that the national railway mileage can be successfully operated in this manner, despite the numerous inter-company matters in which they must cooperate. However, the inevitable geographic, economic, physical, operating, traffic, managerial and financial differences which are found in the comparative circumstances of each railroad do make disagreement inevitable . . .

"Only one with the wisdom of Solomon could satisfactorily compose the inter-regional and inter-company differences involved in all of the matters requiring common cooperative action. Yet solutions of unresolved inter-industry problems, and the inter-regional ones are the most difficult of all, must be found or their consequences may become intensified, should the passage of time bring further traffic erosion."

Mr. Barriger saw these principal advantages of two systems:

"1. Maximum utilization of each of the three basic principles for successful consolidation. (a) End-to-end mergers to permit virtually all freight to move from origin to destination without interchange; (b) rationalization of duplicate services, facilities and equipment to the fullest extent possible, and still (c) preserve competition, the essential discipline for all enterprise, between all principal centers of population, industry and agriculture.

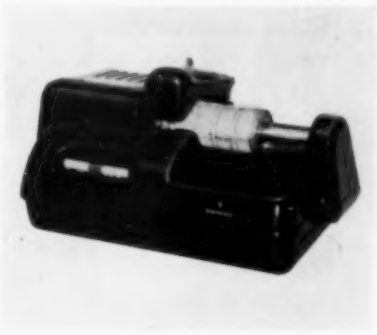
"2. Eliminate the inter-regional differences which are the industry's most serious internal problem."

Mr. Barriger had a word for critics of sweeping merger proposals.

"Critics of consolidation," he said, "reserve their sharpest barbs for complete regional or national plans, asserting that they are paper plans that serve no purpose other than to entertain their sponsors. A general consolidation plan should, however, be subject to no objection because it is purely imaginary, any more than a new building or factory should be ridiculed because it is first imagined, then appears on the architect's plans and engineer's blueprints and only in the final state appears in fact. The idea itself is the conceptual reality that precedes the physical reality; the idea comes first."

He concluded with a cautionary note: "The alternative to consolidating railways voluntarily under private ownership is to do so involuntarily under government ownership."

New Products Report (More on Page 34)



Transistorized Radio

New, compact, lightweight, transistorized radio units are 40% smaller than comparable equipment using vacuum tubes and are also 40% lighter in weight. The units available operate on 72 volts d.c., 12 volts d.c. and 117 volts a.c. They comply with AAR specifications. Two RF tubes are used for maximum performance.

The receiver and the transmitter are designed for four-channel operation where required. The transmitter has full 35-watt RF output, also utilizing a transistorized audio circuit. The microphone circuit is designed for carbon or transistorized handsets. The panel on the control unit is back-lighted to eliminate glare.

The new power supply is completely transistorized for 12-volt or 72-volt operation. No vibrators are used. The 72-volt power supply is regulated to safeguard against surges and overload. A battery-saver circuit reduces standby drain on 12-volt models. *Bendix Radio Division, Industrial Communications & Electronics Dept. - RA, Baltimore 4, Md.*

600-Ton Shear

Annual savings of approximately $160,000 are expected through the use of a fully automatic 600-ton scrap cutting shear at the New York Central Scrap and Reclamation Plant at Ashtabula, Ohio. The shear, designed and built by Clearing, a division of U. S. Industries, Inc., is one-man operated. It is 2½ stories high and weighs about 300,000 lb. It is hydraulically operated and equipped with a hopper and charging box to provide continuous operation. The operating mechanism is totally enclosed and weatherproofed to permit outdoor operation. It is a self-contained unit; only electrical connections need be made. Uniform lengths, in increments from 6 to 48 in., can be cut by the setting of the controls. Scrap center sills, side frames, and car sides are currently being cut into pieces 5 ft and under for No. 1 heavy melting steel. The shear goes through a complete work cycle every 12 sec. The shear blades are easily adjusted to compensate for wear. *Consolidated Mill Supply Co. (distributor), Dept. RA, 5843 South Loomis Blvd., Chicago 36.*

Facsimile Equipment

Facsimile equipment for the transmission of messages, hand- or typewritten forms known as the Siemens-Hell-Fax KF 108, operates over a telephone circuit. It will handle paper 8.27 by 5.83 in., with a usable area of 7.48 by 5.43 in. Transmission time is 3.5 min. The unit operates on 110 volts a.c., 60 cycles, with approximate power consumption of 120 va.

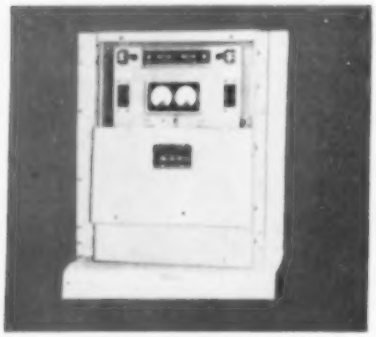
The KF 108 is a combined send-receiver unit with a photoelectric scanning system (exciter lamp and photoelectric cell). Maximum dot frequency is 1,250 cps and telegraph speed is 2,500 bauds.

A feature of the KF 108 is its electromechanical printing system. The sharply defined individual dots are printed by means of a continuously reinked tiny printing wheel. The advantage is that ordinary writing paper may be used; no further processing of the paper is required. The unit measures 20.8 in. wide by 11.8 in. deep by 10.6 in. high. *Elwin Engineering Inc., Dept. RA, 148 South Mountain Ave., Montclair, N. J.*

HY-Rail Equipment

Manually operated Hy-Rail equipment for installation on the Chevrolet 1959 Brookwood station wagon enables the unit to operate on highway or railroad. It is available with either steel or rubber-tread guide wheels held in place by a mechanical lock. Equipment can be furnished for application to units owned by the railroads or as complete vehicles with the Hy-Rail assemblies already in place. *Fairmont Railway Motors, Inc., Dept. RA, Fairmont, Minn.*

New Products Report (Continued from Page 33)



Battery Charger

The Flotrol battery charger models 826HN and 1652HN rectify alternating-current, single-phase input and supply closely regulated, constant voltage, direct-current power for charging batteries. The Flotrol charger supplies the direct-current output and automatically charges the battery to full charge when necessary. It then floats the battery at the desired voltage while supplying the direct-current load power. This condition is maintained until the battery is again required upon subsequent failure of the alternating-current input.

Model 826HN has 115/230 volts, 60-cycle alternating-current input with 130 volts direct-current, 6-ampere output. It is adjustable for 54 to 66 cells. Model 1652HN has 115/230 volts, 60-cycle alternating-current input with 130 volts direct-current, 12-ampere output and is adjustable for 54-66 cells. Either model may be wall or rack mounted. Protective current limiting is provided. Flotrol battery chargers have no moving parts. *Lorain Products Corporation, Dept. RA, 1122 F. St., Lorain, Ohio.*

A.C. Voltmeter

An all transistorized battery-operated a.c. voltmeter provides laboratory performance and range, combined with easy portability. The unit has full scale readings of one millivolt to 300 volts in 12 ranges, with an essentially flat frequency response of 20 cycles to 1.5 mc. It has a db scale and a "battery OK" scale.

High input impedance of 10 megohms shunted by 15 micro-micro-farads is provided in the 1-300 volt range, and input impedance of one megohm shunted by 25 micro-micro-farads is provided in the 1-300 millivolt range. Accuracy is within plus or minus five per cent up to 1 mc, and the unit is usable as an indicator up to 5 mc.

Protection from damage on overloads up to 550 volts is afforded on any scale. The power supply of standard off-the-shelf batteries provides more than 400 hours operation. The unit weighs approximately 5 lb and measures only 5 in. by 5 in. by 10 in. *Motorola Communications & Electronics, Inc., Dept. RA, 4501 W. Augusta Blvd., Chicago 51.*

Cable Clamps

New Panduit "Lok-Strap" nylon cable clamps incorporate a miniature quick-release tab which holds the band of the clamp securely and tightly around wires, but which opens instantly with a few ounces of fingertip pressure. This tab also allows adjustment of the cable clamp or tie to accommodate wire harnesses from ⅛ in. to 2 in. in diameter. Wires may be traced, added or removed from the harness quickly and easily at any time, according to the manufacturer.

If the point-to-point wiring method is used, Lok-Strap cable clamps are mounted before wires are laid, then snapped around the wires as the harness is fabricated. Lok-Strap cable ties are then installed between the clamps to secure wire where necessary. The cable clamps feature all-nylon, precision molded construction. They have excellent electrical insulating characteristics, high tensile strength and a service temperature range from minus 65 deg F to plus 350 deg F. *Panduit Corporation, Dept. RA, 14461 Waverly Ave., Midlothian, Ill.*

Pneumatic Vibrator

A new pneumatic vibrator, delivering 16,000 lbs of impact, can be used on vibrating tables, hoppers, bins, or special packaging platforms, or to shake out railroad cars. The 7-in. model FAC, weighing 539 lbs, operates on 60-80 lbs of air pressure. Speed and intensity can be varied according to need, and unit can be rigged to operate either continuously or intermittently. *Cleveland Vibrator Co., Dept. RA, Cleveland, Ohio.*

Herbicide

A new post-emergence herbicide is available for non-selective weed control in non-cropped areas. The material, Prometone 25E, is claimed to control most annual and many perennial weeds and grasses and to show promise of controlling Johnson grass and Bermuda grass. The chemical is stated to be low in toxicity to man and animals. *Geigy Agricultural Chemicals, Division of Geigy Chemicals Corp., Dept. RA, Yonkers, N. Y.*

'Rotomatic' Collator

To keep up with the high rate of production of modern office duplicating equipment, a new 50-station fully automatic collator is available. "Rotomatic" will automatically collate, count, stagger or stitch from 15,000 to 25,000 sheets per hour. A push-button programmer lets the operator collate any sheet combination required. Unit requires only 17½ sq ft of floor space. *Thomas Collator Industries, Dept. RA, 100 Church St., New York 7.*

A. J. Mahon
CPR

Clifford S. Strang
Jersey Central

O. B. Keister, Jr.
L&N

Roy W. Nelson
M&StL

People in the News

CANADIAN PACIFIC.—**A. J. Mahon,** general passenger agent, Montreal, promoted to passenger traffic manager, Winnipeg, succeeding **H. A. Lee,** transferred to Montreal, to replace **George E. Carter,** retired. **J. M. LeMay,** assistant to general passenger agent, Montreal, succeeds Mr. Mahon. **E. C. Puddington,** district passenger agent, Sudbury, Ont., transferred to Toronto.

J. V. Forrest, general superintendent, Saskatchewan district, Moose Jaw, Sask., appointed assistant to vice president, Montreal, succeeding **J. C. Ames,** assigned to special duties.

CHICAGO & EASTERN ILLINOIS.—**C. J. Cunningham,** assistant freight sales manager, Milwaukee, Wis., appointed freight sales manager, Louisville, Ky., succeeding **R. E. Brandt,** promoted (RA, July 13, p. 45).

DELAWARE & HUDSON.—**F. Neil Hiller,** freight traffic manager—rates, Albany, N.Y., retired Aug. 1. **W. R. St. John,** general freight agent, Albany, succeeds Mr. Hiller. **William F. Brodt** replaces Mr. St. John.

ERIE.—**Richard A. Sause,** general agent, Youngstown, Ohio, retired July 31.

GENERAL SERVICES ADMINISTRATION.—**J. A. Pitner** appointed regional director, Transportation and Public Utilities Service, Dallas, Tex., effective Aug. 1. Mr. Pitner has been traffic manager for the Lufkin Foundry & Machine Co., Lufkin, Tex., and for the Krafco Container Corp. of West Monroe, La.

ILLINOIS CENTRAL.—**James P. Dressel,** traffic agent, New York, appointed foreign freight agent there, succeeding **John R. MacArthur,** retired.

JERSEY CENTRAL—**Clifford S. Strang,** assistant manager of labor relations, promoted to manager of labor relations, Jersey City. **William E. Federkeil,** assistant director of safety, succeeds Mr. Strang.

LEHIGH & HUDSON RIVER.—**Harold W. Quinlan,** vice president and general auditor, Warwick, N.Y., elected executive vice president and comptroller, effective Aug. 1.

LOUISVILLE & NASHVILLE.—**O. B. Keister, Jr.,** manager of industrial development, Chattanooga, Tenn., appointed assistant to the president, Louisville, Ky., effective Sept. 1.

James M. Terry appointed general attorney; **Philip M. Lanier,** assistant general solicitor; **C. Hayden Edwards,** assistant to general counsel; **H. W. Henderson,** assistant to general attorney.

Edward J. Cottom, general traffic manager—rates and charges, Louisville, Ky., retired July 31.

MINNEAPOLIS & ST. LOUIS.—**Roy W. Nelson,** vice president—traffic, elected senior vice president. **J. R. Sullivan,** vice president—personnel, appointed vice president—traffic. **William J. Powell,** general solicitor, promoted to assistant to the president—labor relations. The following named assistant vice presidents to supervise regional sales: **C. L. Fuller,** eastern region; **Dale Ruffcorn,** central; **Robert W. Christie,** western. **Dwight L. McCaughan,** assistant vice president, Minneapolis, named to supervise on line agencies. **C. T. Callahan,** general eastern traffic manager, Pittsburgh, appointed eastern freight manager, New York, succeeding **Otto Birnbrauer,** retired. Mr. Callahan's successor is **Gerald J. Hunt,** general agent, New Orleans, who in turn is replaced by **H. P. McVicar,** traveling agent, San Francisco. **Louis B. Gilliland,** general agent, Boston, promoted to assistant general freight agent, Indianapolis, succeeding Mr. Fuller. **E. F. Zurbriggen,** commercial agent, St. Louis, named general agent, Duluth, to succeed **Elmer A. Alexy,** who becomes vice president, Ventura County Railroad, Oxnard, Cal., effective Aug. 1.

NEW HAVEN.—**W. K. King,** auditor of car service accounts, New Haven, Conn., appointed superintendent car service.

J. A. Gregg, assistant superintendent, Boston, appointed superintendent, Boston division. **F. P. Doran,** trainmaster, Providence, R.I., succeeds Mr. Gregg. **R. J. Duggan, Jr.,** trainmaster, Providence, will assume jurisdiction over territory formerly handled by Mr. Doran, in addition to his present assignment. Abolished position of passenger trainmaster, held by **R. N. King.** Headquarters of **W. H. Cushman,** trainmaster, Braintree, Mass., transferred to Taunton, Mass., and in addition to his former territory, will assume jurisdiction over territory covered by **D. G. MacLeod,** trainmaster, transferred to Readville, Mass. Mr. MacLeod succeeds **C. R. Murphy,** who has been transferred to Framingham, Mass., a new position.

NEW YORK CENTRAL.—**Raymond J. Tiffany** appointed freight claim agent, Buffalo, N.Y., succeeding **George Coates** (RA, July 27, p. 72). **Norman R. Berner** named assistant freight claim agent, Buffalo. **Herbert N. Paradeis** and **William J. Getty** will continue as assistant freight claim agents.

George E. Harrington, district freight sales manager, Baltimore, Md., appointed division freight sales manager, Rochester, N.Y., succeeding **Donald A. Chisholm,** district freight sales manager, retired. **Walter C. Reynolds,** assistant district sales manager, Baltimore, succeeds Mr. Harrington.

SOUTHERN PACIFIC.—**Robert L. King,** trainmaster, Portland division, appointed assistant superintendent, Salt Lake division, Ogden, Utah, to replace **D. W. Tanner,** promoted (RA, July 27, p. 73).

TEXAS & NEW ORLEANS.—**C. R. Dohm** appointed district freight and passenger agent, Waco, Tex.

OBITUARY

R. A. Baumann, comptroller, general auditor and assistant treasurer, **Green Bay & Western,** died July 16.

James Lawson, 53, an assistant general freight agent of the **Reading,** died July 24.

Horace B. Northcott, 63, general advertising manager, **Union Pacific,** Omaha, Neb., died July 23 of a heart attack while aboard the road's "City of Las Vegas."

Eugene W. Stetson, 77, chairman, executive committee, **Illinois Central,** New York, died July 19 in Doctor's Hospital.

Supply Trade

John E. Lane, sales engineer at **Dana Corp.,** has been appointed sales manager of the Clutch Division, Toledo, Ohio.

Robert L. Thompson III has been named manager of transportation of **Edgewater Steel Co.,** Pittsburgh, Pa., succeeding **Harry A. Zell,** retired. Mr. Thompson formerly was traffic manager of Vulcan Detinning Division of Vulcan Metals, Inc.

G. M. Lynch, district manager for Alberta, Saskatchewan and Manitoba, **General Motors Diesel Limited,** has been appointed district manager for British Columbia. **Walter Bedford,** district service manager for Ontario and Western Quebec, promoted to succeed Mr. Lynch, and in turn is replaced by **G. L. Stephenson,** formerly engaged in engine scheduling and liaison activities at London, Ont.

Sperry Products, Inc., Danbury, Conn., has expanded its sales program and established four sales districts. New district managers are: **Tracy W. McFarlan,** Eastern district, New York; **Ralph H. Frank,** Central district, Pittsburgh; **James M. Dickey,** Midwest district, St. Louis; and **Carl B. Haugh,** Western district, Los Angeles. They will report to **Henry T. Lowell,** general sales manager. **George Campbell** has been appointed marketing research coordinator. Service engineers and laboratory facilities will be available in Richmond, Pittsburgh, Los Angeles, Chicago and Danbury.

John P. Chadwick, Jr., 1705 Russell Road, Alexandria, Va., and **Ray L. Hillpot,** 23 Park Drive, Lansdale, Pa., have been appointed manufacturer's representatives for **Bronco, Inc.**

A new battery and charger service station—warehouse to serve the New York metropolitan area is scheduled to be opened in August at 34-11 62nd Street, Woodside, Long Island, by the New York branch of **Exide Industrial Division, Electric Storage Battery Co. H. H. Warren** is New York branch sales manager.

You Ought To Know...

A handling charge of 2 cents per 100 lb on piggyback freight has been proposed by the Pacific Southcoast Freight Bureau. The charge—approval of which is pending before the California Public Utilities Commission—would apply on "loading or unloading service performed by carriers or their agents in connection with TOFC rates" published in Section 2 of PSFB Tariff No. 294-B.

Sixteen railroads will use the Ribbonrail oxy-acetylene pressure welding process to weld a total of approximately 500 miles of track this year, according to Linde Company, division of Union Carbide Corp. Wabash heads the list, with about 115 miles of track programmed for welding.

Norfolk & Western Y-6a Mallet No. 2156 has been added to the collection of the National Museum of Transportation in St. Louis (bringing to 27 the number of locomotives on display). The giant articulated, N&W President Stuart T. Saunders commented, "was a great locomotive. . . I am delighted that it will now be preserved."

Air express revenues of the Railway Express Agency in the first half of 1959 totaled $22.4 million—up 20% over revenues for the corresponding 1958 period. Ton miles increased 22% during the same period.

Subway trains for Washington, D. C., are proposed in a mass transit report prepared by order of Congress. A projected 33-mile, $460,000,000 electrified rail system would have trains running underground in the city, on the surface in suburban regions. The plan also calls for new roads, express buses and parking facilities. It will be the subject of Congressional hearings this fall.

Shop craft unions represented in the Railway Employees Department, AFL-CIO, have worked out an agreement for settling jurisdictional disputes among themselves. The pact provides for an annual survey of the classification of work rules (for purposes of allocating jurisdiction) and sets up the machinery for final settlement of jurisdictional squabbles.

Some $7.5 million is being spent by C&NW in Wisconsin this summer on roadway, bridges and highway crossing protection. Of this, $6 million will pay for routine maintenance; the rest will go into improved facilities, such as new 115-lb rail, new ties and ballast, and automatic crossing protection. The road will lower parts of its belt line around Milwaukee by as much as 18-in. to accommodate high loads under existing bridges.

"Thanks for Using Coast Line" is the slogan for ACL's new system-wide courtesy campaign. President W. T. Rice told some 300 employees at a kick-off meeting in Jacksonville, Fla., that "courteous and efficient service" will attract both passenger and freight business.

Fuller explanation: Iowa Gov. Herschel C. Loveless, who has expressed opposition to the elimination of firemen from diesel locomotives (RA, July 13, p. 46), is a former employee of the Milwaukee, and is reported still to be a member of the Brotherhood of Railway Clerks.

New freight car deliveries by Pullman-Standard in the second quarter were up about 50% from first quarter totals, according to Champ Carry, president of Pullman, Inc. Barring a prolonged steel strike, P-S car building is expected to at least equal 1958 production, despite a slow start this year.

Michigan State's fifth transportation conference and seminar will be held at East Lansing Sept. 10-11. Its theme: "Searching for New Skills in Traffic and Transportation Management." More than 300 transportation executives are expected to attend the sessions at Kellogg Center.

The Louisville & Nashville will celebrate a centennial on Oct. 27—the 100th anniversary of the first train operation between Louisville and Nashville. L&N will mark the event by reissuing its "History," originally published in 1943. About 12,000 words of text and 20 or more new photos will be added to update the book.

Potash from Soviet Russia, moving into Midwest ports via the new St. Lawrence Seaway, has reportedly forced North American potash producers to reduce prices to remain competitive.

NYC ferry "Niagara" will be saved from the scrap heap to become a combination floating office and warehouse for the Public Service Electric and Gas Co. of New Jersey. The 47-year old riverboat has been out of service since the railroad's Hudson River service ended (RA, March 30, p. 68). All engines and boilers will be removed for the ferry's new career, but one advantage PSE&G finds in a floating office will remain: it can be towed to new locations as needed.

If railroads win the right to compete "side-by-side" with truckers, "there are many of us who feel that the independent truck industry has seen its best days and is due to disintegrate," J. Robert Cooper, president of American Trucking Associations, told the Mississippi Trucking Association in Biloxi.

Advance reservations on the Santa Fe's eastbound "San Francisco Chief" are 24% ahead of what they were in the corresponding period last year. The number of chair cars out of northern California has been increased from four to five.

The Illinois Railroad Association (32 member roads) is planning production of a 16-mm sound-and-color film pointing up the close ties between railroad and community, sketching the technological progress the carriers have made, and outlining the taxation and regulatory handicaps under which they operate. Primary audience will be community and civic groups.

JUST PUBLISHED!

LOCOMOTIVES AND CARS SINCE 1900

by Walter A. Lucas

This brand-new, picture-packed book presents the fascinating lore and little-known details of American and Canadian locomotives and cars since the late '90's. Every railroad man will want a personal copy of this beautiful volume.

Big 8½ x 11 inch pages! Hundreds of rare photographs, plans and detailed drawings.

The contents of the book have come out of rare book collections, out-of-print cyclopedias and the author's own, almost priceless, personal photo files. Whether you are looking for information on the Erie Triplex-type mallet locomotive or the high-speed Atlantic-type passenger locomotive used in the early part of the century, you are sure to find thousands of interesting details in this unusual publication.

Contents: Steam Locomotives and Tenders. Electric Locomotives. Diesel-Electric Locomotives. Freight Cars: Box, Refrigerator, Stock, Flat, Cabooses, etc. Passenger Cars.

Cloth bound, $5 per copy.

Simmons-Boardman Pub. Corp.
Dept. LC-59
30 Church Street, New York 7, N. Y.

Please send a copy of LOCOMOTIVES AND CARS SINCE 1900. I enclose herewith my remittance of $5. If not completely satisfied, I may return this book within 10 days' receipt for full refund.

Name .....

Address .....

City ..... Zone ..... State .....

CLASSIFIED ADVERTISEMENTS

Rates: $10 per column inch (1" deep x 1⅜" wide)
Equipment used or resale accepted in this section

FOR SALE
REBUILT
RAILROAD CARS FOR INTERPLANT USE
GONDOLAS • BOX • FLAT
ERMAN-HOWELL DIVISION
LURIA STEEL & TRADING CORP.
332 South Michigan Avenue
Chicago 4, Illinois
WEbster 9-0500

APPRENTICE TRAINING

Since 1909, the Railway Educational Bureau has trained men for a number of major railroads. We furnish the texts, questions and grading service for all technical instruction covering 3- or 4-year programs. The study programs are raising the skill and usefulness of apprentices on many railroads today. The Bureau is staffed and its texts authored by railroad men. Information is available describing methods used and fields covered. Also special help is available for advancement. THE RAILWAY EDUCATIONAL BUREAU, 1809 Capitol Avenue, Omaha 2, Nebraska.

R. R.
EQUIPMENT
HOPPER TANK CABOOSES
FLATS GONDOLAS BOXES
AND SPECIAL DESIGNS

WE WILL REBUILD
TO YOUR SPECIFICATIONS
OR BUILD NEW
AS REQUIRED

RAIL & INDUSTRIAL
EQUIPMENT CO., Inc.
30 CHURCH STREET
NEW YORK 7, N. Y.
PLANT: LANDISVILLE, PA.

FOR SALE

Baldwin Diesel Electric 120 Ton, 1000 H.P. Switcher. Rebuilt 1955, less than 2000 hrs. since rebuilt. Bargain Price. STRIEGEL SUPPLY & EQUIPMENT CORP., 307 Jack Street, Baltimore 25, Maryland. Phone ELGIN 5-7922.

KEEP
BUYING
U.S.
SAVINGS
BONDS

DIESEL-ELECTRIC LOCOMOTIVES

2 New 25 ton G.E.
1 New 25 ton Whitcomb
2 Used 23 ton G.E.
2 Used 45 ton G.E.
1 Used 44 ton G.E.
1 Used 80 ton G.E.
1 Used 100 ton Alco
3 Used 100 ton Gen. Motors

R. C. STANHOPE, INC.
60 E. 42nd St., N. Y. 17, N. Y.

Advertisers' Index

American Brake Shoe (Railroad Prods. Div.) ..... Inside Back Cover
Bethlehem Steel Company 3
Edgewater Steel Company 6
General American Transportation Corp. ..... Inside Front Cover
General Electric Company 12-13
Graybar Electric Co., Inc. 30
Railway Maintenance Corp. 18
Safety Electrical Equipment Corp. 5
Timken Roller Bearing Co. 24-25
Union Switch & Signal Div. of Westinghouse Air Brake Co. 4
Waugh Equipment Company ..... Back Cover
Wix Corporation 16-17

Why Conductor Boggan Is Happy

What is the best way to promote favorable employee and public relations? Here is an unsolicited letter with important evidence on this point. The writer is Santa Fe Conductor W. W. Boggan at Winslow, Ariz. He says (in part):

"Freight traffic on the Santa Fe is at an all time high—at least on the Coast Lines (Albuquerque and West).

"I have run several of our passenger trains in recent weeks. The trains have been full—seat space hard to get. Pullmans also are doing well. We like it this way.

"Last October the Santa Fe speeded up its freight service and began to run short fast trains, sometimes less than 50 cars. About a year ago crews agreed to do away with assigned cabooses—they now move without change from New Mexico to the Coast—saving time at terminals. The fast trains usually move through terminals on the main track, rarely entering the yards.

"Employees in all departments have cooperated to keep these trains moving. When a crew is called, they have been reporting ahead of time to get their orders. Switch lists and wheel reports are prepared by the inbound crew and left in the caboose for the outbound crew.

"Tonnage business through Winslow exceeds that of World War II. Time saved on freight trains between Chicago and the West Coast is 24 hours—3 days or less for the entire trip. Terminal delay has been reduced almost to zero. Dispatchers give the crews all the time they can on passenger trains, to keep the freights moving. Several speed restrictions have been removed.

"A large number of train, engine and yard men have been hired in recent months—nearly 100 new brakemen. Most of the new men are 'students', since experienced men are hard to find. Most of the new employees are from colleges.

"Your article on the line change in Arizona (RA, May 18, p. 71) is on the section of the road where I hold seniority. Our brotherhood organizations came to a quick, amicable arrangement with the management concerning this change.

"I have appreciated reports in Railway Age about passenger traffic. I'm sure employees are just as interested in a solution to this problem as the railroads are."

Conductor Boggan's constructive attitude toward his job certainly stems, primarily, from his pride in being associated with a successful and progressing enterprise. The enthusiasm of enthusiastic employees is invariably conveyed to customers and the public. All in all, it's hard to escape the conclusion that the most effective instrument there is, for successful employee and public relations, is a well-run and growing business.

The Santa Fe is fortunate, of course, in that it happens to be serving a rapidly growing territory. But that certainly isn't the whole story. There have been times and places in railroad history when rising traffic volume has *not* been accompanied by constantly improving equipment and service.

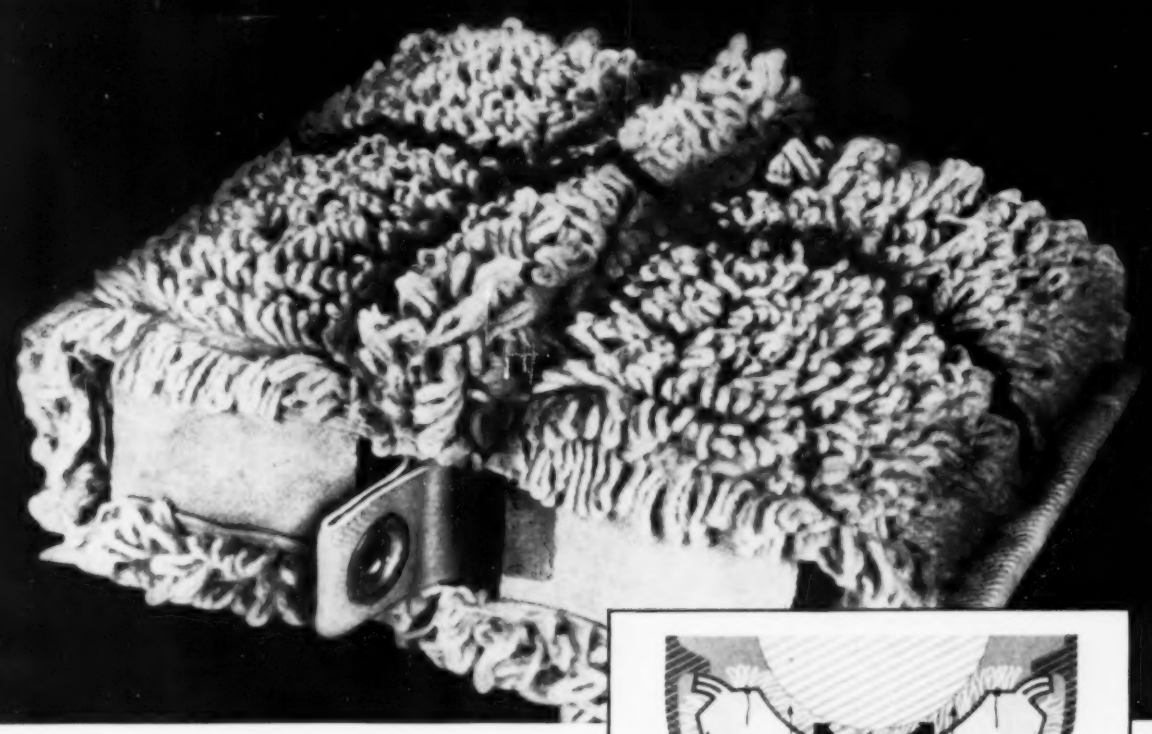
Indeed, in the case of the progressive railroads serving the West Coast, it may well be asked: Are they prospering because their tonnage is up, or is their tonnage up (at least in part) because of the quality of service they're giving? The kind of confident optimism most of them express—not only in words, but in deeds—certainly must be an important factor in their accomplishments.

What Conductor Boggan writes about with such enthusiasm is corroborated from the upper end of the Santa Fe ladder. President Ernest Marsh, in his recent address to the AAR Mechanical Division, said:

"We are in a new era—of faster freight trains to give better and more reliable service than our competitors on the highways. We are convinced we are regaining business and certainly we are arresting further erosion of traffic. . . . In 1926 there was much ado about the Santa Fe Chief being put on a 62-hour schedule. . . . Today we run freights faster than that."

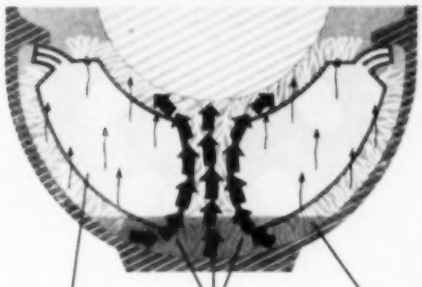
Mr. Marsh didn't whitewash the serious side of the railroad picture—the fact that the road had lower net earnings in 1958 than it did in 1929, while ton-miles had doubled and property investment had increased 68%. But a company that does as well as it can with what is available usually wins acclaim—like the resourceful servants in the Biblical parable of the talents. All of them were praised, except the one who did not put his talent to work.

SO ALL RAILROADS CAN GROW: Some railroads in older sections of the country are in a transition stage—getting rid of a lot of obsolescent service, so they can climb onto the "growth curve" again. Their friends and neighbors (regulators included) ought to help them make the necessary readjustments as quickly as possible—so they, too, will have the opportunity again to "point with pride" to improvement and growth. The whole railroad industry will go forward with unprecedented vigor when more and more roads can secure the means to generate in their employees the attitude exemplified by Conductor Boggan.



ABSCO

LUBRICATING PAD HAS TRIPLE CENTER WICKING ACTION


Foam neoprene cores have both wicking and pumping action
Triple center wicking action, direct from bottom of box to journal
Chenille loops for resiliency, wicking and distribution

Triple center wicking action feeds an abundant supply of oil to the journal by the most direct path. More oil flows up through the neoprene cores and still more wicks up through the fabric panels, assuring complete saturation of the chenille cover at all times.

The Absco journal lubricating pad is the first and only pad to be engineered and produced with all the advantages and characteristics that critical railroad men prefer!

Positive wicking action. Special twisted loop chenilling distributes steady flow of oil over entire journal. Specially engineered center section provides additional path for direct wicking action at shortest distance between free oil and journal. Foam neoprene cores provide further wicking capacity.

Resilience. Foam neoprene cores, specially compounded for high resilience with great resistance to set. The compressible chenille loops add to overall resilience.

Ease of application. Easily installed. No tools required. Reversible side to side, top to bottom, end for end.

Stability. Sturdy fabric retainers resist shifting, even at low temperatures.

Interchangeability. Absco pads fit standard A.A.R. journal boxes. No modifications necessary.

Ease of renovation. Built to withstand roughest cleaning methods. No delicate or heavy metal parts to break or tear loose.

Non-linting. Thoroughly washed and pre-shrunken cotton wicking material was especially selected for its non-linting characteristics.

Long life. Accelerated life tests indicate durability far in excess of the present renovation interval, even under extreme service conditions.

This impressive combination of features and advantages is exclusive with the Absco lubricating pad.

AMERICAN Brake Shoe COMPANY

RAILROAD PRODUCTS DIVISION • 530 Fifth Avenue, New York 36, N. Y.

51,600

ft. lbs.*

OF LADING PROTECTION

Here is the highest capacity draft gear for standard pockets ever approved by the A.A.R. — the new Waugh-Gould Type 700 Friction Rubber Draft Gear.

The friction elements provide the same smooth action that characterizes the Waugh-Gould Type 420 Friction Gear while the rubber mats assure a capacity greatly in excess of the capacity of any friction gear.

Here is the gear for all cars with conventional draft gear pockets. Specify the Waugh-Gould Type 700 Friction Rubber gear on your next draft gear order.

*Certified under A.A.R. Specification M-901-53, Waugh-Gould Type 700 Draft Gear has an official average capacity of 51,600 ft. lbs. at 2.62" average gear closure with average reaction of 1,006,200 lbs. Half travel capacity, 10,640 ft. lbs. or 20.6% of capacity at full travel.

WAUGH 56 YEARS 1902 • 1958 SERVICE TO RAILROADS

WAUGH-GOULD

TYPE 700 FRICTION RUBBER DRAFT GEAR

WAUGH EQUIPMENT COMPANY

NEW YORK • CHICAGO • ST. LOUIS

Canadian Waugh Equipment Company: Montreal